

digit **FastTrack**

YOUR HANDY GUIDE TO EVERYDAY TECHNOLOGY

To Mac OS

We get under the hood of Mac OS and give you all the information you'll need to get the most out of your Mac

Fast Track to Mac OS



Getting familiar
Installation
File management
Useful software
Time Machine and Boot Camp

System preferences
Security
Using Commands
iPhone and iPad OS
Applications and utilities



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YOUR TECHNOLOGY NAVIGATOR

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Fast Track

to

Mac OS



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CORRIGENDUM

In the Fast Track to OpenSolaris,

1. On page 5, "proprietary operating" should be read as "proprietary operating systems".
2. On page 6, "we Indians" should be read as "if we Indians".
3. On page 29, repository for VirtualBox is /extra and WINE is /contrib. For the rest, it is /release.
4. On page 88, Mumbai OpenSolaris User Group link should be read as <http://tr.im/mmosug>

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Introduction

In a world of personal computers dominated by bulky and unstable operating systems, Macintosh has popularly been viewed with admiration and awe for its intuitiveness, style and usability. The first set of personal computers to be commercially successful, the first popular graphic user interface, the first laptops in the market; the list of achievements by the Macintosh line of products is endless.

With its focus on aesthetics and high price tag, for a long time the Macintosh was limited to a small customer base consisting of Apple enthusiasts. But with the entry of the Apple Inc in the consumer electronics market and its transition to Intel processors, the platform is beginning to gain popularity.


Powered by the philosophy of comprehensive aesthetic considerations and ease of use, the success of the Macintosh has spawned a series of derivative products that have revolutionised their respective segments. The Apple iPhone is doing to mobile phones what Macintoshes did to computers, adding a feeling of sophistication and suaveness while far outclassing all competition in terms of quality. The newly announce iPad promises to do the same with netbooks.

At the core of these success stories is the story of the Mac OS, the powerbase behind the Macintosh. Universally preferred by graphic designers, artists and other creative users, this award winning OS keeps the functionality of the computer as its core idea, protecting the user from getting caught up in a myriad of technical details. A true reflection of the Apple philosophy, this OS has matured with the company, growing from a little GUI OS in the early 1980s to the Mac OS X Snow Leopard in 2009, a truly powerful OS capable of holding its own against any other OS, may it be Windows or Linux.

And so it is that we bring you this fast track, aimed at enabling you and making you aware of the world of the Macintosh. All chapters have been written with the assumption that you are new

Introduction

to a Mac and care has been taken to draw parallels between Mac features and the equivalent ones on a standard Windows PC.

With this fast track, you shall take the first gentle step into the world of the Apple Macintosh. It begins with the history and the origins of the Mac OS and will soon make you proficient in using this innovative, powerful and easy to use OS, hence opening to you a door to the plethora of future possibilities offered by the Mac. 

1 Getting familiar

The way you use your system, be it for surfing the internet, multimedia, creative vent or work, depends extensively on how you can use the various applications present and how easily you can access them. From the basics like a graphical user interface (GUI) to the highest degree of customisation, your ideal computing experience is redefined by your OS. We've covered a lot of Windows relevant features in the past, including the latest Windows 7.



The Mac, which is the cooler and snazzier form of the older Apple Macintosh computer, is in direct competition with the more widely used PC (which adheres to the IBM model and is x86 compatible). The difference? Apple directly sub-contracts the hardware to companies, and maintains a great deal of control over both the software and the hardware components. Microsoft's Windows is supported by a wide variety of hardware manufacturers. Ignoring the major differences in hardware design, what matters most is the end-user experience. Both operating system models

Windows 7 vs. Snow Leopard



1 Getting Familiar

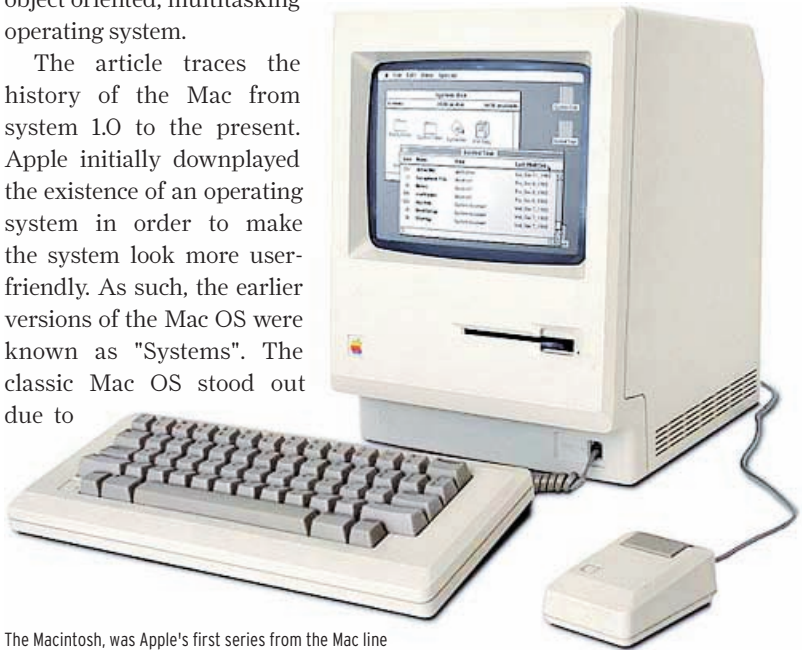
have undergone significant changes in the two and a half decades since the creation of the “personal computer”.

Mac OS X (where X stands for ten) is the latest series of operating systems that works on Apple hardware. The Mac OS is obviously more exclusive when it comes to demand, considering how Windows dominates the market today.

1.1 Brief history

Let’s observe the history of this operating system. The operating system on the Mac can be broadly classified into two categories. One, the Mac OS Classic family of operating systems, which was based on Apple’s own code, and two, the Mac OS X operating system, a fusion of the classic Mac OS and NeXTSTEP, an object oriented, multitasking operating system.

The article traces the history of the Mac from system 1.0 to the present. Apple initially downplayed the existence of an operating system in order to make the system look more user-friendly. As such, the earlier versions of the Mac OS were known as “Systems”. The classic Mac OS stood out due to



The Macintosh, was Apple's first series from the Mac line

its lack of a command line. Earlier, computers were designed with command line in focus. A lot of kernels were based on Unix. The Mac OS was a completely GUI-based operating system and was more user friendly than competing operating systems. However, the earlier versions were notorious for their limited memory management and system conflicts.

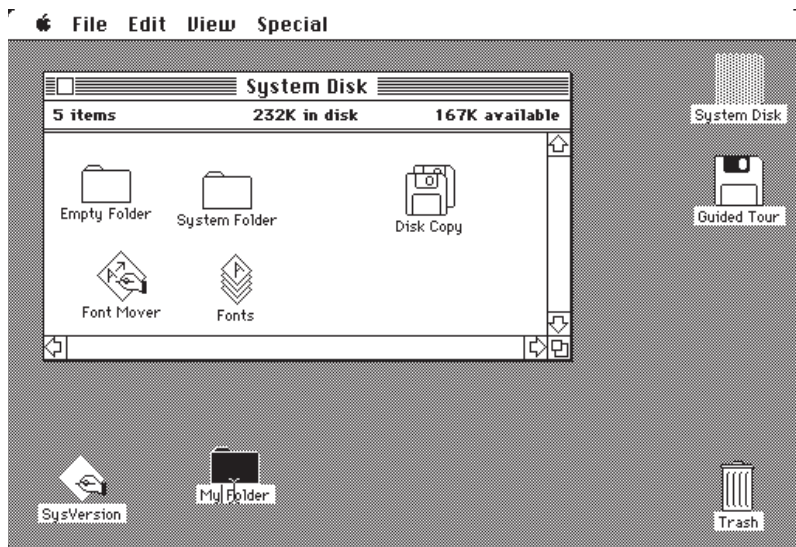
System 1.0

The Mac 128k came with System 1.0 that featured a desktop, windows, menus and icons. However, it also limited the user to run only one program at a time and it was in black and white. System 1.0 also lacked the shut down command. Systems 1 to 5 all lacked the capability to run multiple applications at the same time.

System 3.0

System 3.0 is notable for the introduction of the hierarchical file system (HFS). The file system employed by Mac since its inception was designed to handle only a single layer of directory structure. The Macintosh file system (MFS) was succeeded by the hierarchical file system (HFS) that allowed you to create complex directory structures. In other words, it was now possible for the user to have a folder inside another folder and so on. What seems commonplace to us was the initiation of a new era in the world of operating systems. However, both the file systems used by Mac have a unique way of storing a file.

The file systems used by Windows (or Unix for that matter) store a file as a collection of bytes. HFS stores a file as "two forks". In other words,



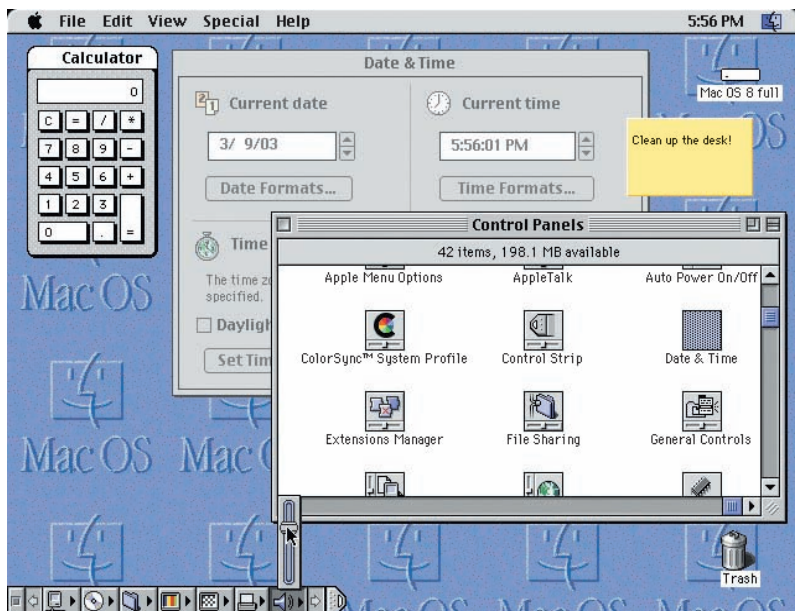
The first Mac System

1 Getting Familiar

a file would have two parts to it. One would be a data "fork" that would contain more or less the same data as other file systems and the other was the resource "fork" which contained information regarding styling etc. The advantage of having forks was that applications other than the one which created a file could still access the data in the data fork. This however becomes a problem when one transfers files from the Mac to other operating systems. The files lose their resource fork and only the data fork will be retained. This difficulty led to the development of MacBinary, BinHex and other encoding programs that combined the data fork, the resource fork and finder information into a single document. The documents can then be run on Windows and Unix with no loss of information.

Systems 5, 6 & 7

The MultiFinder allowed users to run multiple programs at the same time. System 6 was the first Mac to utilise 32-bit memory addressing to its fullest. Before this the Mac used to have an arrangement in which 24 bits were used for addressing and 8 bits were not fully utilised.



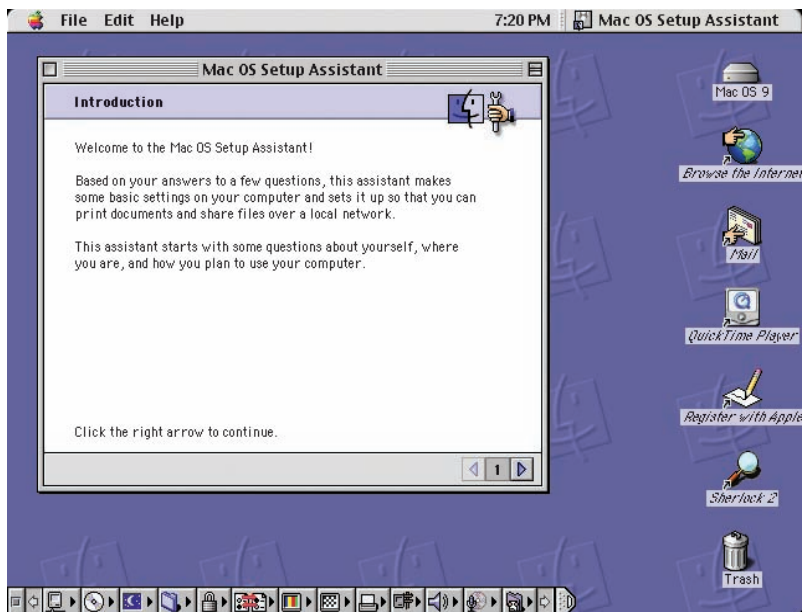
Mac OS 8 included a major revamp since System 7 and was released in 1997

System 7 (code named Big Bang)

Apple officially renamed the operating system as "Mac OS" with the release of system 7. It was originally developed for the Motorola 68k processor and was ported to the PowerPC platform after Apple adopted the new processor. System 7 introduced drag and drop. This meant that users could drag icons with the mouse and drop them where the user desired. The concept of aliases was also introduced. Aliases are similar to shortcuts on Windows. Double-clicking on an alias would cause the original file to be executed. Trash (Recycle Bin in Windows) could now hold data even after reboots. In earlier versions the data contained in the trash folder could no longer be accessed after rebooting. System 7 also introduced AppleScript which was essentially a scripting language for automating tasks. AppleScript became quite popular and is used even today.

Mac OS X

In the early 90s, Mac sales were dipping. It was then that Apple co-founder Steve Jobs (who had left the company management earlier) was brought



The next version, Mac OS 9, had finer improvements over version 8

1 Getting Familiar

back in. Apple acquired NeXTStep and the combined effort was a revamping of the Mac OS X. The development of OS X (pronounced as OS ten and not OS Ex) began in May 1998. The operating system was finally released to the public in March 2001. The OS was a considerable improvement over previous versions and had a slicker interface.

OS X consists of two parts

1. Darwin
2. Aqua

Darwin is the core of the system and is based on BSD (Berkeley Software Distribution). Theoretically, the Unix core makes the operating system a whole lot more stable. However, earlier versions of OS X were noted for the unreliability due to bugs in the kernel.

Aqua is the GUI developed for the operating system. It is based on the theme of water and hence the name. Known for its droplet like buttons with extensive usage of transparency and reflection effects, Aqua was a considerable improvement in the Mac's GUI.

A server version also exists for the OS X. It's very similar to OS X, but has several inbuilt networking tools.

Let's look at the different transitions the OS X went through. The different versions of Mac OS x are as follows:

Cheetah (10.0)

Cheetah, the first version of Mac OS X, was a radical change from the previous versions. It came with a lot of innovative features and a new interface but suffered from several drawbacks. In fact, severe criticism of Mac OS X 10.0 resulted in Apple offering a free upgrade to 10.1 to users.

Cheetah introduced many characteristic features of OS X including the Dock, AppleScript and the Aqua interface. It had native PDF support and was shipped with an email client and address book.

Cheetah came under fire for its sluggish interface. Aqua looked a lot better than previous interfaces, but had slow user interface response speed. The operating system also lacked several features like DVD playback and CD burning, both of which were available in previous versions.

Puma (10.1)

Mac OS X was made the default operating system in Macs after the release of Puma. Puma was better received than Cheetah, but it still lacked features. It introduced image capture to access images from scanners and cameras, the

system performance was enhanced, CD and DVD burning was reintroduced and it promised better support for printers.

However, it was nothing more than a minor upgrade from 10.0. It lacked the stability and functionality for it to be used as the main operating system.

Jaguar (10.2) and Panther (10.3)

Jaguar can be considered as the first well received OS X operating system.

Jaguar was much smoother and a lot more stable than Puma. Bonjour which allowed devices over a network to find other devices was shipped with it. It also came with CUPS (Common Unix Printing Systems), Journaled File System (A journalling file system is a file system that logs changes to a journal (usually a circular log in a dedicated area of the file system) before committing them to the main file system. Such file systems are less likely to become corrupted in the event of power failure or system crash) and Inkwell (a software for handwriting recognition).

Panther came with Safari – Apple's own browser. Earlier versions used browsers such as Internet Explorer and Mosaic.

Tiger (10.4)

Tiger was the longest running OS in the history of the Mac (There was a gap of at least 30 months between the Panther and Leopard). Apple considers it



Version 10, named Mac OS X, had a futuristic interface. Here is an image from Mac OS X Leopard

1 Getting Familiar

their most successful OS till now. Tiger came with tonnes of new features and applications. Its interface had a smoother look and was a lot more responsive.

Tiger introduced Dashboard that enabled the use of mini application called Widgets (these are similar to gadgets present in Windows, notably in Vista and Windows 7). Voice over was another application that came with Tiger, which read out text from the screen. Tiger was shipped with a dictionary as well.

This brings us to the Leopard and Snow Leopard. What is interesting to note is the unique nomenclature followed while naming their systems after members of the cat family.

The Leopard (v 10.5 of the Mac OS X series) was a vast improvement when it came to features, and enhancements. Apple boasts of over 300 changes. Ranging from system design to developer tools, Leopard introduces a newer desktop; better Docks, Stacks, and several other notable features such as BootCamp, iCal and Time Machine are also present.

The newest in the series of Mac OS X is the Snow Leopard, which is officially Mac OS X v10.6. Announced very recently at Apple's WWDC



Apple came a long way evolving from the first Mac to Snow Leopard Installed

(World Wide Developer Conference), it is one of the first operating systems in the series that focuses more on under the hood changes. The Snow Leopard boasts of improved performance and efficiency. Other optimisation features such as reduced memory footprint have been introduced as has improved compatibility with other non-Apple software.

A note of the hardware is required before diving into the whole Mac OS X experience. First, the Mac OS X was meant to run on an Apple computer. Apple shifted from Motorola to IBM's PowerPC architecture in the early



The New Mac Mini

80s. Come 2008, Snow Leopard will be accessible only on Intel compatible hardware. This exclusivity of Apple was notorious in the earliest versions of its systems. Simple connectors and adapter cables were unique. Nowadays, most standard hardware and peripherals have support.

Leopard can run on most Mac systems. The exact models can be found on Apple's support web site. You need a processor running at least 867 MHz or faster, with free memory of 9 GB on your hard disk and at least 512 MB RAM. Since most systems nowadays pack more punch than that, most of you will not have to worry about the basic requirements.

Let's look at the improvements Apple has packed into the OS X Snow Leopard. First, there's support for 64-bit systems. Sixty four-bit chips are very common nowadays and have lost a lot of their initial exclusivity. The reason why 64-bit is so popular is the amount of memory it can address. Most


1 Getting Familiar

32-bit applications can address only up to 4 GB of physical RAM, whereas 64-bit applications can address as much as 16 billion GB (purely academic numbers). Both Snow Leopard and Windows 7 offers a 64-bit version on certain systems. Though a lot of Snow Leopard's inbuilt applications are 64-bit, they run quite satisfactorily even under a 32-bit install. If Apple is to be believed, every application has been re-written and revamped as a 64-bit application. The exceptions include Grapher, iTunes, DVD Player and Front Row. So now, the browser – Safari can address more memory that aids better security. Snow Leopard also has bigger, better icons. Icon View options have been stepped up with higher resolution and clarity. It also provides more control over the Sidebar, improving the Finder search facilities. Most other facilities such as iChat, PDF View, QuickTime have all undergone major improvements that improve the user experience. It also boasts of a speedier login, shutdown and network connectivity.

Please remember though that the Snow Leopard on the other hand works only on Intel systems. It needs at least 1 GB of RAM and 5 GB of free disk space.

1.2 PC or Mac?

The best part about Mac OS X Snow Leopard is the lack of choice when it comes to kits. Unlike Windows 7 which comes with a Home, Premium, Ultimate, Professional with a variety of combinations –the Mac way of handling it is pretty much simple. You buy a Mac, you get Snow Leopard along with it. The one major advantage Apple has, is that most of its hardware syncs seamlessly on its home OS as compared to others. Since both software and hardware design are part of the deal, the integration among software is better than Windows. The downside is that not all applications work on a Mac. Hence, only large makers of software actually make separate installation set-ups for Macs and PCs.

There are other factors that you need to consider while working your way around the system – from basic modifications to customising your Mac OS X experience. The article will also illustrate networking and internet browsing facilities. One of Mac's most valuable advantages is its security. There's very little malware doing the rounds that a Mac OS is vulnerable to. 

2 Installation



The latest version of Mac OS - Snow Leopard

The first step while installing Mac OS X is to check for hardware compatibility. The Mac operating system will not run so easily on any hardware. Similarly, though backward compatibility is guaranteed, older Macs will not run newer versions. For example, the latest Snow Leopard will not run on any PowerPC and is suited only for Intel Macs. It works on the following machines:

- Mac Mini (early 2006 and later)
- MacBook (all models)
- Mac Pro (all models)
- iMac (early 2006 and later)

2 Installation

- Xserve (late 2006)
- MacBook Pro (all models)
- MacBook Air (all models)

Needless to say, all newer versions support it. If you have any uncertainty about what type of Mac you have, click on the apple in the top left portion of the screen and select “about this Mac”.

Most experienced users will know the basics of installing any new operating system. Ensure that your system meets the requirements. You also need 1 GB RAM and 5 GB free space on your hard disk. The support site on Apple has the detailed specs of the installation requirements.

Your computer will be in either of these two conditions. One, it has no operating system on it. You have backed up all your data (hopefully) and erased your hard disk. Alternatively, you already have an earlier version of a Mac OS X installed (check the earlier versions in the previous chapter). You obviously have your operating system neatly tucked away in a DVD or a USB Flash Drive.

2.1 Getting started

The installation process might be a little laborious, so please pay careful attention through the entire process. Once you’ve checked your system for compatibility, insert the DVD into your system and restart your machine. If you run the installer disk while on Leopard, you merely need to click Install OS X from your DVD Drive and everything will be taken care of you. However, you many choose to boot directly from the DVD. The first thing you need to answer is your choice of language.

This is not essential just for the installer process but also throughout as it becomes your default language hereafter.

The installer will prepare the installation, and you will be presented with a welcome page with a License Agreement. You obviously **MUST** agree to it, since without it you will not be able to move



Snow Leopard Install Screen

forward. You are then asked to choose where you want to install your operating system. You need not install necessarily on your system if you have less space. Mac OS X Snow Leopard also installs on externals which are Mac formatted.

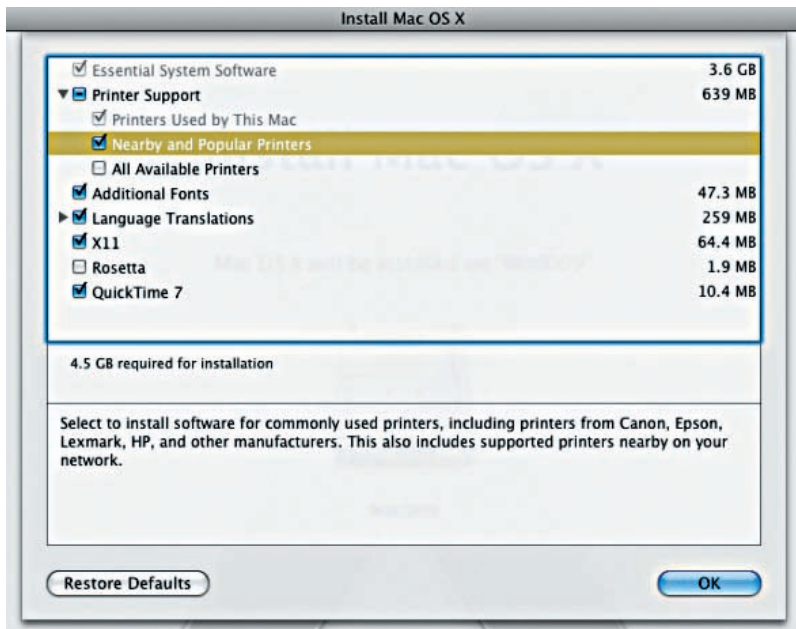


Choose Installation Destination

If you have booted from the Snow Leopard Install disk, your usual startup drive is idle. Hence you can use Disk Utility to erase it in case you need to free up space. You can also partition the disk now. We'll be covering Boot Camp later for those of you who want to get ahead of yourself and dream of a dual or triple boot system. To access facilities like partitioning and Disk Utility, go to Utilities on the Install OS X window.

A very sure way to go about installing any new operating system is to back up your data first. Usually termed as the "Archive and Install method", it has its benefits, primarily a backup for all your data. Though Snow Leopard's install is very clean and has little hiccups, you may still choose this strategy for safety. We'll show you how to backup your existing data using Time Machine in the coming chapters. As of now, let's stick to a basic install.

2 Installation



Customize Installation

Snow Leopard allows you to customize your installation by letting you select the facilities you want.

In case you are not very finicky about the process, just click on Restore Defaults, and move ahead. You may however customise the following :

- Printers
- Fonts
- Languages
- X11
- Rosetta
- QuickTime

You may obviously not unselect the “Essential System Software” – which presents the core of the operating system.

Printer support

The printer support for Snow Leopard is easier than that of previous models. For example, the installer automatically figures out what models have been

used before by you and installs those drivers. It also installs drivers of common printers manufactured by global manufacturers as well as support for all printers it detects on the local area networks. However, if you want, you can add support for All Available Printers. This is quite redundant since even if you do encounter a new printer, Snow Leopard can always download the driver setup from the Internet on a later date.

Additional fonts

Snow Leopard contains additional support for a fonts which help you type in regional languages. It has fonts for Chinese, Korean, Arabic, Hebrew, Thai, Cyrillic, Devanagari, Gujarati, Punjabi, Tibetan, Armenian, Cherokee, and Inuktitut. The package is small (max 99.2 MB) and may be installed since you're not really losing out on space.

Language translations

Most of use our operating system only in one language. Hence Language Translations support for a host of languages is quite irrelevant. At best, we might want translations in a few others. Click on the dark horizontal triangle next to languages and select the languages of your choice. It's added by default and you can choose to save a few 100 MB by disabling translation facilities for most languages.

X11

X11 is a windowing system used by some Unix Software. It provides a GUI interface for the program to run in Mac OS X. Installing it is recommended as you never know when you might run across an application that needs it.

Rosetta

Rosetta was the great bridge between the PowerPC and the Intel Mac. Since the new Snow Leopard works only on Intel, a lot of very old Mac software will not work. What Rosetta does is that it translates the instruction code written for a Power PC system to something the Intel architecture can understand. Again, it's recommended. The space is a meagre 2 MB. The leap to Intel was just over 3 years ago and though most software manufacturers have adapted, you might meet one that has not.

QuickTime 7

QuickTime is essential to any Mac user. Snow Leopard comes bundled with

2 Installation

a few version that contains many features and improvements. The downside is that it might not support older media formats. Hence, if you want your older media to work, check this as it installs QuickTime 7 and ensures backward compatibility.

Don't spend too much time pondering these options. Snow Leopard can always download software, drivers and basically any other support material later on demand.

Click Ok to continue with the installation. Click Install. You can Go Back to double check all your options. Click Install and wait while Snow Leopard installs on your system. If you have used a Mac OS X before, you'll note that the install time for the system has decreased drastically. If you're running Leopard and upgrading to Snow Leopard, you're installing from Leopard. Hence, you'll need to provide your password to begin the installation process.

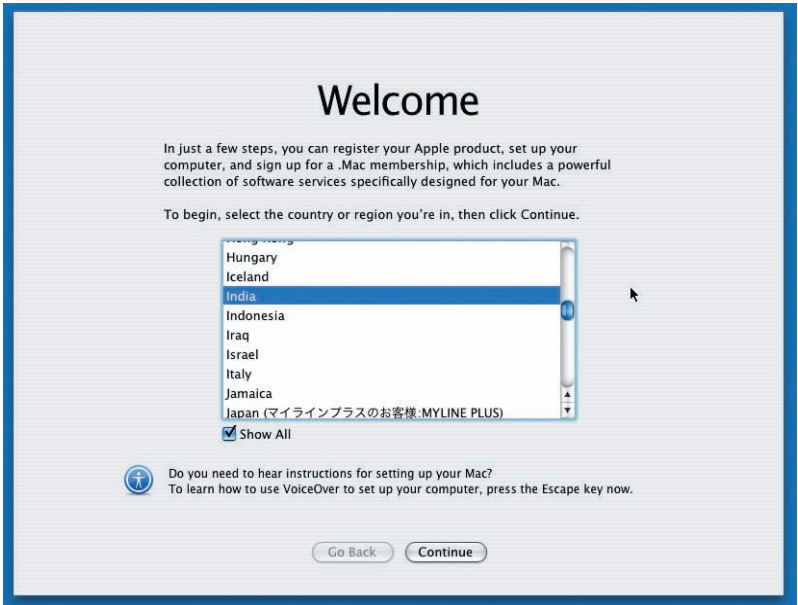


Wait as it installs - Copying Files

The key to installing an operating system or any software for that matter is having the patience for it to load. The time, which depends a lot on your hardware, is less than 45 minutes on most computers. As you can see from the screenshot, there is a progress bar which you keep checking impatiently while

the installation ends. Your system restarts and a little for customisation is in order before you can claim your installation to be complete.

Give it a little time to load up the required drivers and boot. Once it's done, you should see a friendly Welcome Screen welcoming you to Snow Leopard and inviting you to register your Mac OS.



Welcome to Snow Leopard

For those who were running an earlier version, you might get a few notifications like upgrading your mail so that it's compatible.

For those who booted it on to a blank drive, you'll need to provide some more information about yourselves. First, select your country. Tick the "Show All" indicator to see India in the list of countries.

Click Continue. Since we shall assume that you are a new Mac user, ignore the file transfer facilities. Next, select the keyboard layout. This is the fairly universal QWERTY. Again, show all allows you to switch to a fancier Dvorak or a Devanagiri enabled keyboard if you have one.

Snow Leopard keeps urging you to register throughout the installation process. It automatically detects a network and uses it to connect to the


2 Installation



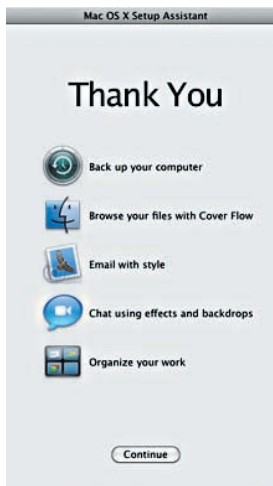
Account Creation

database and setup your default Mail client with whatever email address you're using.

Apple also takes a deep interest in how, where and to what end you plan to use their Operating System. Once you've satisfied their curiosity, you need to create a User Account. Generally, based on your personal information, Snow Leopard presumptuously generates a name for you. You are free to modify it. Also, you need to enter and reconfirm a password. It also advises you to save a reminder which may help you recollect your password in the rare circumstance that you were careless enough to forget it.

Once you're done, Mac OS X politely thanks you and lets you continue on with your life. You may now start experiencing the Mac OS X. 

net. However, you may always use the Different Network Setup button in the lower right hand side of the screen to change the way it connects. Now, you may choose to not register since those formalities can be done later. However, having an Apple ID is necessary to create an address card for you, get you on to Apple's



The Final Step

3 File management and window controls



Notice the similarities and difference from a window or Linux desktop

Once we are done with the installation and you have shiny new Mac screen in front of you, it is time to get some actual work done. So before you move on to any advanced stuff, you should be comfortable with the basics such as managing windows, files, folders and the like.

3.1 Snow Leopard basics

Accounts and Home Folder

Mac which derives its root from the Unix operating system has adopted the native multi-user approach to the core. Unix/Linux users shall find themselves at home over here. Each user on a Mac computer gets a personal account, each of which can have its own protected files



Home folder of the MacAdmin user showing various default sub folders

3 File management

and settings. The user accounts in Mac OS X have five different level of User Privileges

1.Administrator: You are demi-god once logged on this account and you can do all the maintenance task and make system critical changes. Since this also implies that a mistake can cause total mayhem it is strongly recommended not to use an Administrator Account for day-to-day work.

2.Standard: These accounts are targeted towards everyday use. They give you all the required privileges that you need to make in your everyday working without letting one standard user interfere in the computing experience of any other.

3.Managed with Parental Control: You want your 7-year old boy to have a mail account and play some music but are afraid that he will change some setting or delete one of your files, well look no further.

4.Guest: This account is the answer if you want to lend your computer to someone to do one quick check of his mail but want to be sure that he/she doesn't spook around your stuff or makes any permanent changes to the computer.

5.Sharing Only: This account is for remote connections.

So now let us say you have logged onto a standard account and now when you open the finder window [elaborated below] you will see a set of default folders under a folder with a little hut shaped icon on this. The hut shaped icon folder is your "Home" folder. [this is exactly like the home folder found on Linux machines]

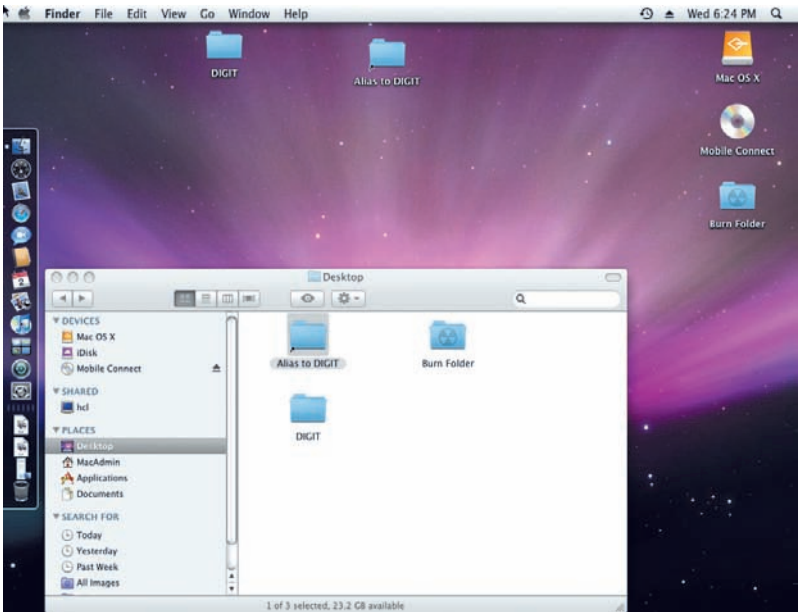
The home folders for each account are located in the Users directory in the file system. Each Home folder further contain folders for pictures, documents, music, desktop, downloads, music etc. Home folder has a permanent place in the sidebar of the finder window from where it can be quickly launched for easy access.

The files and folders that you put on the desktop are also located within you home folder in a folder called "Desktop"

Another folder of note is the "public" folder. This one provides you with an easy interface if you want to share some files over the local network, say a home network. A sub folder is the Drop Box folder which is like a one way shared folder, where users from other computers can drop files for you but they can't remove or modify or copy any files from it. They can't even see its contents. Mac is capable of even hosting a simple website out of the box.

We shall now concentrate on two important aspects, one being the Finder Window and the other being the Dock.

3.1.1 The finder



The standard finder window with two just created folders

The finder is the replacement of Windows Explorer in Windows or Nautilus in Gnome or Konqueror in KDE albeit with slightly different functionality of each, and it is quintessential that you become ninja with Finder to become a ninja on a Mac. To launch it either you can click on its icon [a very distinctive one with a face on it] on the Dock or you can just even click on some empty space on the Desktop. A finder window is so important to the working of the Mac that it is always running in the background and is also the first icon on the Dock.

We shall start with describing the array of buttons you find on the top bar of the Finder window.

1.Back and Forward Buttons: Very self explanatory, they allow you to go back and forward in your directory listing. Very useful when you want to reach a top level directory quickly.

2.View Controls: You have four options over here, the default 'Icon View', 'List View', 'Column View' and 'Cover Flow'. Column view is the counterpart

3 File management

of the detailed view in the explorer in windows and the Cover flow is a more visually appealing way of browsing through your media.

3.Quick Look: This gives an instant preview of the selected item

4.Proxy Icon: By dragging this onto an empty area you can create a copy/shortcut of the folder currently open depending on whether you are pressing the option key or not.

5.Action Menu: Context specific menu, equivalent of right clicking on the selected icon.

6.Search: This is another spotlight front end integrated into the finder window, but won't include WebPages and mail in the result.

7.Hides or shows the Sidebar or the toolbar, returning a very concise view.

SideBar in Finder

With more widescreens [courtesy the omnipresent laptops] sidebars play an important role in giving access to frequently used content in a non obtrusive yet quick way. The sidebar is divided into four categories:

FinderSidebar: The various quick launch features of the sidebar

1.Devices: You plug in your pen drive it shows over here, you connect your iPod it shows over here and same when you pop in your favorite mixed cd. All the external media is stored over here. Each device has a eject icon next to it, which acts like the "safely remove feature".

2.Shared: Any shared device which your computer can access irrespective of whether connected via Bonjour, Time Capsule and so on will be present over here.

3.Places: If you feel constricted by the choices available by the default folder in the Home folder you can expand your choice over here.

4.Search For: These are a bunch of smart folders which contain useful searches for every day needs, For example files created/modified in the last day or week. Similarly there is one for showing all the movies or documents.

Remember you can rearrange these four in whichever order you want by the mere act of drag and drop. Performing Common Task in Finder

3.1.2 The dock

A definite distinguishing feature of the Mac UI, your Dock is your quick launch bar and taskbar rolled into one. It even has shortcuts for frequently used programs, folders and documents. We will study the preferences associated with Dock [in the System Preference section] a little later down,



An icon being dragged out of the Dock

right now we will concern ourselves with the options and configurations that the Dock present itself.

A natural point to start is to learn as to how to add and remove icons from the Dock. Well it is as simple as it can get, just locate the item [file, folder, application] that you want to put on the Dock and drag it on it and it will be added to the Dock. You can arrange which Icon appears where in the Dock again by dragging them within the Dock, with the only limitation that the finder icon will always be far right or top and the Trash icon will always be far left or the bottom. Always remember that Dock is just a place to hold shortcuts so when you say put a file on the Dock, you are not actually shifting the file from its location in some folder, you are merely creating a shortcut for it. Deleting icons is similar just drag them out of the Dock and the trash application will give you nice confirmation dialogue box to account for the same.

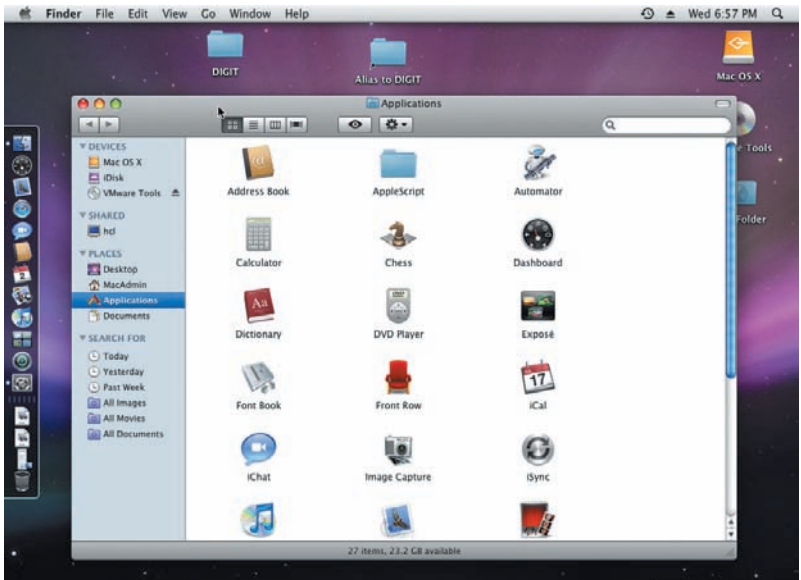
An any point you can just hover your mouse icon over any icon to reveal a tooltip kind of text incase you are having a hard time thinking what the icon actually represents.

3 File management

If you will notice there is a divider line on the Dock which separates you files and folders from your application, right clicking on it will bring a small options menu that will let you configure the auto-hide option, change the magnification and the location of the dock on your screen. It will also let you change animations for maximise and minimise operations and finally open the Dock Preference pane which also pretty much contains the same options.

3.1.3 Windows controls

A brief but very important introduction to the common controls and features shared by all (Read most) windows in Snow Leopard shall go a long in way in ensuring a smooth operation.



Notice the similar-to-windows yet different enough to confuse controls on the title bar

Look at the “Application” window in the screenshot above. Starting with Top-Left corner we first see the three round buttons:

1.The Red Button: It displays a cross on mouse over and as the icon suggest is used to close the window

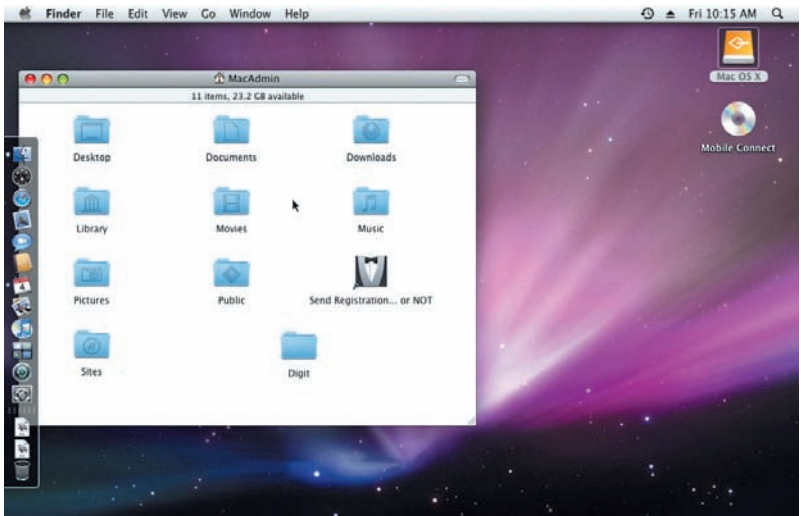
2.The Yellow Button: It displays a yellow a minus sign on mouse over and

is for minimizing the current window to the Dock. Double clicking the title bar also accounts for doing the same thing.

3. The Green Button: It displays a plus sign on mouse over and is for the maximization operation.

Next is the Proxy Icon (The folder icon with stylised “A” written on it. This will change according to which window is opened and can be dragged onto Desktop or other viable areas to create aliases (shortcuts) or copies (use in conjunction with the options key).

Then you see the name of the window and that is pretty much it as far as the functionality of it goes.



Notice the absence of sidebar and the preview pane

The blank button you see at the top-right of some windows such as finder is for a concise view of that particular window as illustrated in the screenshot below

3.1.4 Files and folders

Obvious as it may sound folders is a place where you keep your files, but Mac OS features two special kind of folders in addition to the normal regular folders, one being the Smart folder and other being the Burn folder. We will start with the regular.

3 File management

Regular folders

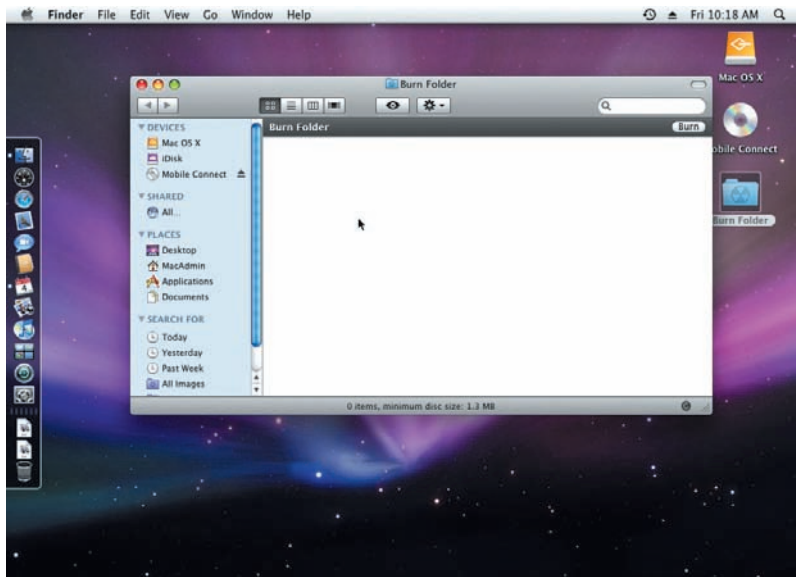
Like almost all operating system these days even Mac comes with set of default folders in your home directory labeled as Documents, Picture, Music and so on. To create your own regular folder, first navigate to the location where you want to create it and then Click on File-> New Folder (Shift+Option+N) or you can right click on any empty spot and create a folder from there.

To rename a folder you select it via a single click and then you press the return [enter] key. Alternate way to rename is to select via a single click and after a momentarily gap click again on the text containing the previous name.

The folders have and can be configured to show a small overlay icon on them representing the contents for example the Developer folder contains a small translucent Hammer icon on it.

Burn folders

Well they are used to do one thing and that is to Burn Discs. You can create a burn folder anywhere by going to the File Menu of Finder and choosing “New Burn Folder”. After this simple drag the files you want to burn on the



An empty Burn Folder


disc into this new folder or copy-paste according to your preference. You are not actually copying any file into the burn folder they are just being aliased over there as in the case of the Dock. Once you are ready to burn the data you can open the Burn Folder and click the icon for Burning in the upper-right corner. You will be prompted by Mac to enter a Disc as a final step.

Smart folders

Smart Folders are like saved searches of Spotlight which are treated like traditional folders. So say you can create a smart folder which lists all your music from across the hard drive irrespective of their actual location.

You can create your own smart folder by firing up finder and choosing File->New Smart folder as in the case of a New Burn Folder. Now you will get a window where you'll be able to configure and set up this folder that you have just created.

First feed your search query for what all items you need. Then you can further refine the search by clicking on the "+" button which is located right next to the save button. It will give further options. You can completely drill down to your requirements if click on the 'Kind', over here on going to "Other" you will get a huge list of filtering options which can be as esoteric as filtering your photographs which have a certain white balance setting.

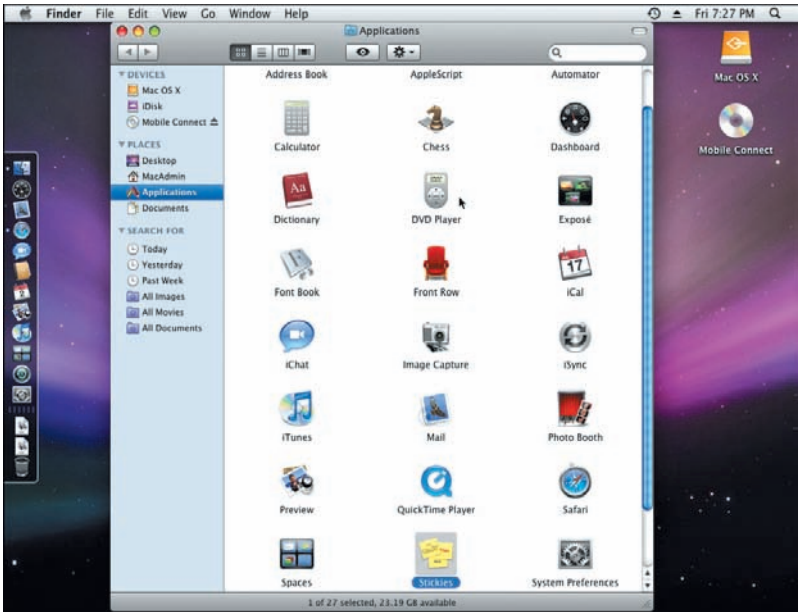
Finally when you are done setting up the super advanced search query you can save it by hitting the save button for future reuses. So consider an example where you can create a smart folder to look for all photographs taken during daytime across your hard disk in all your albums which is constantly updated without requiring any further effort from your side. Magic isn't it? 

4 Applications and utilities

Snow Leopard is filled with native applications and utilities. In fact, once you install the operating system, you'll have an image editing tool, a word processing program, a browser (Safari, of course) in addition to several other utilities.

4.1 Applications

By default, you'll get the following applications with Snow Leopard. You can quickly go to the Applications folder either by clicking on the Applications icon from the toolbar or by using the [Command] + [A] keyboard shortcut.



The Applications window

Address book

Address Book in Mac OS X is a flexible and convenient place to keep track of all your contacts – from phone numbers, to anniversaries. However,

the best thing is that it's integrated throughout Mac OS X. Just enter all the information once, and you can access it from Mail, iChat or any other third-party applications. You can import contacts, create distribution lists and labels for clubs and groups, print address labels, cards and envelopes, and do a lot more. You can also sync the contact information on your Mac with your iPhone or other mobile phone, PDA, or MobileMe, so that your Address Book follows you everywhere.

Automator

Automator is a work-flow tool for automating tedious, repetitive manual tasks such as resizing a collection of photos, converting file types, combining text files, syncing files between folders, and so on and getting them done quickly, efficiently and effortlessly. Just about anything that you can do with your Mac, you can automate. It comes with a bevy of useful scripts already installed. But what's even better is that you can create your own Automator actions without any complex programming or scripting. Just assemble individual steps into a complete task by dragging these actions into an Automator workflow or use the Watch Me Do action that lets you record an action such as pressing a button or controlling an application without inbuilt Automator support and replaying it as an action in a workflow. If you still cannot get your way through, there's a good chance that an Automator script for the task you're trying to complete already exists on the web. Check out <http://www.apple.com/downloads/macosx/automator> for lots of premade example.

Calculator

The Calculator application in Mac OS X allows you to perform simple arithmetic calculations, numerical comparisons, complex logarithmic calculations, and logical operations. It comes with three modes: basic, programmer, and scientific. You can review a history of your calculations as a running record and print them with the Print Tape feature ([command] + [T]). Calculator also includes a built-in unit converter for converting common units of measure like area, length, and volume and currency. It even talks in the sense that it can read out both button presses and the results if you want it to by using the Speech drop-down menu.

Another cool feature in the Mac, Spotlight, has the functions of a basic math calculator. Just type the equation into Spotlight, select it and it'll solve it for you.

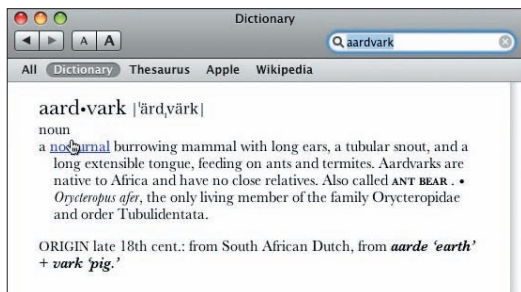
4 Applications and utilities

Dashboard

This is home to widgets - mini-applications that let you perform common tasks and provide you with fast access to information such as real-time weather, stock tickers, RSS feeds and flight information. Mac OS X includes twenty built-in widgets, and you can add more by downloading them from the internet.

Dictionary

It is Dictionary that enables a system-wide integrated spell check in Mac OS X, and lets you search definitions and synonyms using the *New Oxford American Dictionary* and *Oxford American Writer's Thesaurus*, which include over 2,50,000 words. You can search from either of them or combine all both with Wikipedia to get a larger pool of words to look up. Dictionary even includes a list of Apple terms and definitions that lets you know your Mac better.



Detailed definitions in the Dictionary



The dock in Mac OS X

In many applications, including Safari and Mail, highlighting a word followed by a right-click will open a menu that allows you to look up that word with this Dictionary.

Front row

When you want an immersive media experience on your Mac with an elegant full-screen display of your favourite movies and photos, use Front Row. Just about any media you wish to access is available to Front Row, even the media on your other Macs. You can invoke Front Row by using an Apple remote or by pressing [Command] + [Esc]. An elegant interface appears filling the entire screen space, letting you choose from songs, photos, and videos on your Mac or on other computers in the home network. You can exit Front Row by depressing the [Esc] key.

DVD player

You can use DVD player to play a movie in a window and control your viewing experience as if you were using a full-featured remote control with a standalone player. With this utility, you can add many options you don't get with Front Row, such as tweaking the colour or messing with the audio equaliser. It remembers where you stopped viewing a particular DVD and gives you the option to resume play at that point itself. You can save your favourite scenes for viewing later, restrict access to certain DVDs using parental controls, and play media stored on your external hard drive.

Note

By default, DVD Player plays the movie in full screen mode but you can change this behaviour by going to DVD Player > Preferences.

Exposé

If you like to multitask and work with many applications and documents at the same time, you probably spend lots of time poking through your open windows just to uncover the one you need at the moment. Exposé lets you instantly cut through the clutter of open application windows by un-shuffling overlapping windows on your desktop into an organised thumbnail view arranged in a grid, so you can quickly locate and switch to any window or get to any file on the desktop.

Exposé not only tiles all your open windows, it also lets you view the contents of open windows of a particular application. To see a full-screen preview of a selected window, just press the Space bar. That's not all. When you move from one tiled window to the next, you'll see its title displayed at the bottom of the window. When you find the window you need, just click on it. Every window will return to full size, and the window you clicked will become the active window. Exposé is there in the Dock too. When you drag a file onto a Dock icon, all the open windows of an application pop up, so that you can place the file in the correct window.

Font book

Font Book gives you control over all the fonts installed on your Mac making managing Fonts easier than most other operating systems. You can preview, create custom font groups, search, install, and deactivate fonts using Font Book. You can also validate your fonts to identify any damaged fonts that can cause your system to become unstable and ensure that installed fonts are displayed properly.

4 Applications and utilities

iCal

iCal is the built-in powerful desktop calendar application in Snow Leopard. It has multiple view options, lets you create and manage multiple calendars, allows you to enter new events, set the duration of the event, and more. You can also publish (Calendar > Publish) and subscribe to other calendars, which is great for following your cricket or keeping up with someone else's schedule. These calendars are also linked to Mail and you can share them with friends and family over the internet.

Image capture

Image Capture lets you transfer images from a camera or a scanner to your Mac for use in iPhoto and other photo editing applications. You can selectively download all, or any portion, of the contents of your digital camera, crop images to a variety of standard and non-standard sizes, and even delete unwanted pictures from your camera. Image Capture by default embeds ICC profiles in the images you download or scan, and it lets you make slideshows with your photos and images and create simple web pages to share your favourite ones with friends and family over the internet.

iSync

iSync makes it easy for you to synchronise the calendar on your Mac and contacts in Address Book with hundreds of iSync supported mobile phones and PDAs from popular phone manufacturers such as Nokia, Samsung and Sony Ericsson using either a USB cable or Bluetooth and keep your devices up to date.

Photo Booth

Photo Booth is likely the silliest, but the most fun application included with Snow Leopard. With Photo Booth, you can perform simple operations such as snapping a picture or video clip using the built-in iSight camera on your Mac; or complicated operations as filming a short movie with a fake background. Click on the Effects button to choose all sorts of cool effects and backdrops. You can even twist and twirl your smile with the strange Twirl effect, add an artistic look with the Coloured Pencil effect and experiment with other effects to transform your look.

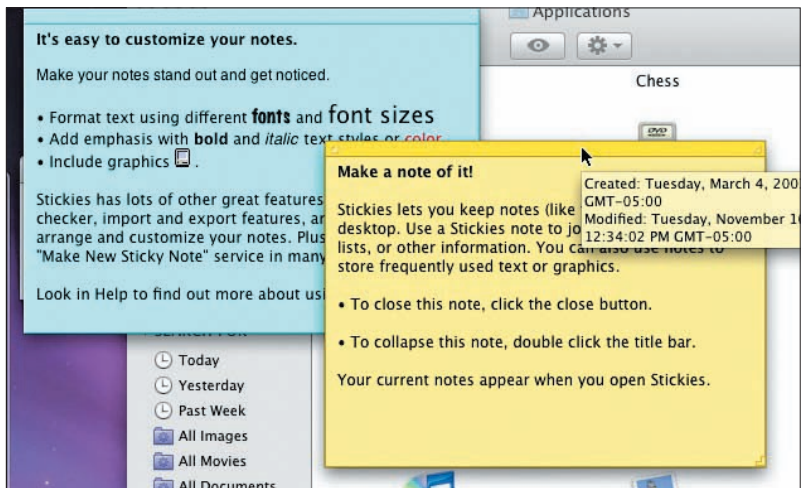
Preview

Preview is the Snow Leopard's built-in Image and PDF file viewer. It's a very simple and elegant application. Any image you download in common

formats such as JPG or PNG will be opened by default with Preview. You can resize, rotate, crop, and adjust colours in images, and annotate images and PDFs. You can also use Preview to snap screen shots, create icons and scan images directly. You can combine PDFs by simply dragging and dropping them onto Preview. The search is again Spotlight-powered like several other Mac applications and makes searching and copying text from PDFs easy.

Spaces

Spaces lets you create spaces, group application windows together according to the way you work, and easily switch between them organising each space.



Virtual Post-it Notes

Stickies

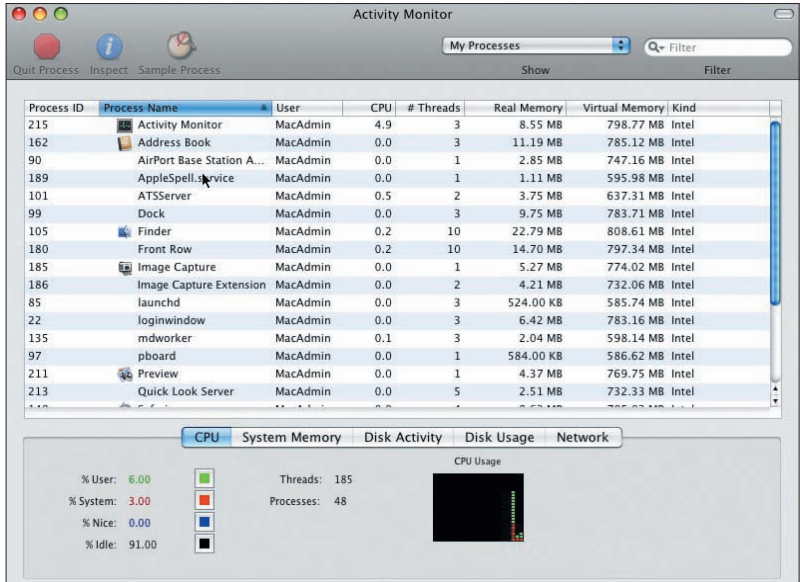
Stickies is an e-version of Post-it notes that lets you keep notes on your desktop so that you'll never forget what you need. You can jot down lists, reminders, and other relevant information. Just press [command] + [N], and you'll end up with a blank note you can type into, change text colours, fonts, and font sizes, add images to, and use as a reminder. You can even share the quick list on a sticky by exporting your sticky note as rich text (File > Export Text).

System preferences

The System Preferences application lets you customise your system and do everything from setting a desktop picture to adding external devices and more. It has a straightforward interface and easy-to-understand language that makes it simple to make your Mac truly yours. If you can't find a setting, just type in what you wish to do in the Spotlight-powered search field. The best part is that you can even search for Windows-style terms, such as "wallpaper" or "wireless network" if you know what you're looking for, but don't know the corresponding Mac term.

TextEdit

TextEdit is an easy-to-use and not-too-shabby word processor built into Mac OS X. It's great for creating simple compositions like grocery lists, but it also includes features like spelling and grammar check, tables, smart quotes, lists, and graphics and has an auto save function. TextEdit's default format for saving files is RTF (Rich Text Format) but you can also save your documents in a number of other formats including Microsoft Word, OpenDocument Text (ODT), and HTML.



Detailed information of your processes

4.2 Utilities

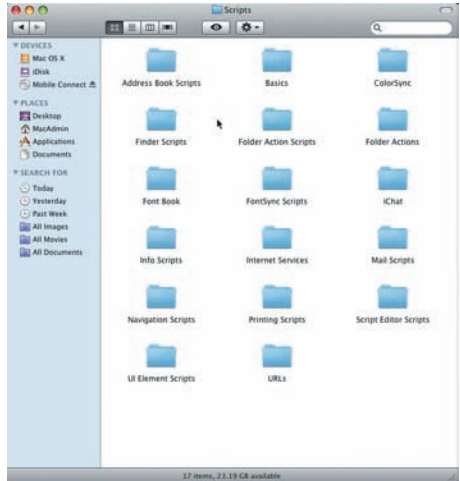
Following are all the useful utilities installed by default with Snow Leopard. Since there is no keyboard shortcut to Utilities, you might consider dragging the Utilities folder icon to the Finder toolbar for quick access.

Activity Monitor

Activity Monitor displays detailed information about all of the processes running on your Mac, including CPU utilisation, disk, memory, and network usage. You can see exactly how your computer's resources are being used by the applications currently running via a searchable table, helpful graphs, or even directly as a constantly running graph in the Dock icon. You can view the processes organised in different groups, quickly search for processes, and forcibly quit the ones that are needlessly hogging the processor or are unresponsive over some time. Activity Monitor also makes it easy to see analyse your memory is being used and how much memory is available, as well as disk activity and the amount of data transferred over the network.

Airport Utility

If you own a Time Capsule, an Airport Base Station, or an Airport Express, AirPort Utility allows you to manage and monitor those devices. This utility makes it easy to set up a base station with the optimal settings or combine multiple base stations to create a larger wireless network. You can view the status of the internet connection, create secure networks, set up wireless printing, and manage your Time Capsule hard disk all from this one utility.



Various pre-installed scripts

AppleScript Editor

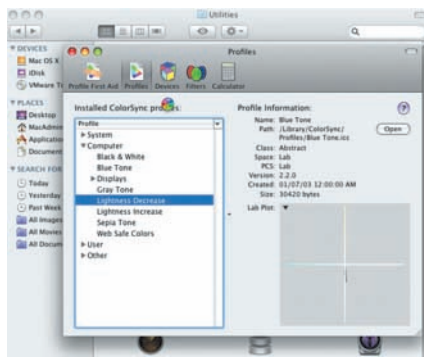
AppleScript is a powerful and versatile scripting language built into Mac OS X. AppleScript Editor an easy-to-use yet powerful authoring tool for

4 Applications and utilities

generating, editing, testing, running and compiling AppleScript scripts that can create shortcuts, automate repetitive tasks like resizing photos, or even make custom applications that save you a great amount of time. You can check <http://developer.apple.com/applescript/> for instructions on how to utilise AppleScripts.

Audio MIDI Setup

MIDI is an acronym for musical instrument digital interface. Audio MIDI Setup is used to hook musical instruments to your computer and to control settings for all audio going in to and out of your Mac, whether it's from a microphone or a multi-track digital audio workstation.



Various preinstalled colour profiles

Bluetooth File Exchange

Bluetooth File Exchange makes it easy to share files between your Mac and other supported Bluetooth-enabled devices such as mobile phones and PDAs. It automatically discovers Bluetooth devices in range of your Mac and lets you pair with

them. After you run this utility, you have the option to either drag the file you want to transfer onto the Bluetooth Dock icon and wait for a list of recipients to appear, or select a file in the Bluetooth File Exchange window and hit the Send button.

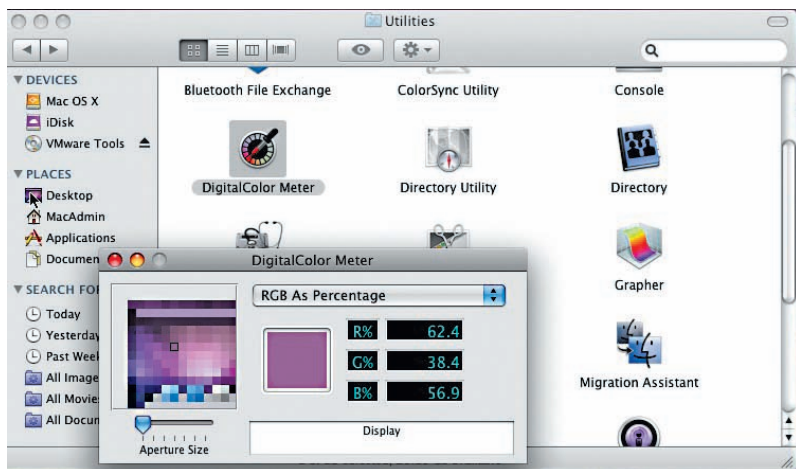
ColorSync Utility

ColorSync is included in Mac OS X as a built-in colour management system because everyone sees colour differently, and because devices (printers and LCDs) often interpret colours in different ways. It ensures accurate colour in your images – from the time you capture them on your digital camera until you print or display them – by automatically matching colour from one device to another with the help of profiles. With ColorSync Utility, you can check and repair ICC (International Color Consortium) profiles, compare and inspect two profiles using a groovy three-dimensional graph, calculate colour values by sampling any pixel displayed on your computer and finding

the values for it and view and manage ColorSync information for all devices connected to your Mac. You can even apply filters to, for example, a PDF document with the Filters icon.

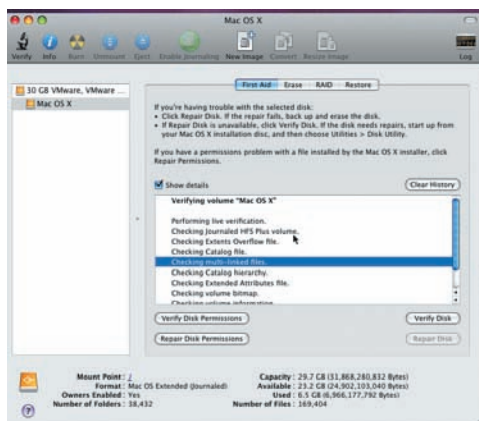
Console

Mac OS X tracks a wealth of diagnostic information about virtually every application on the system, from routine status messages to detailed errors,



Values of a selected pixel

unexpected events and warnings. The Console utility allows you to monitor these logs from a central location instead of you digging for info in a library, which is essential when you are trying to track down a problem, a bugged application or just learn more about what goes on behind the scenes. You can quickly search through thousands of messages



The disk utility window

4 Applications and utilities

to find the specific log you are looking for, diagnose the problem, email it, and delete the logs you no longer need. Console can even automatically alert you when a specific system message occurs if you set it up that way.

DigitalColor Meter

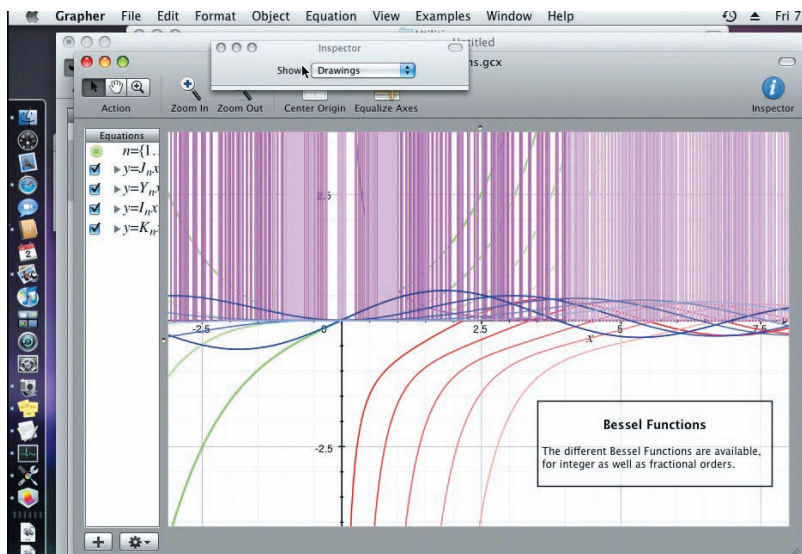
With this utility you can inspect the colour values of any pixel displayed on screen. As you move the pointer around the screen, DigitalColor Meter displays the actual value of anything that you select. Set the size of the aperture (all the way down to a single pixel), and choose from a multitude of ways the results can be calculated, in a variety of different formats, including RGB, YUV and CIE.

Disk Utility

Disk Utility is a powerful toolbox for viewing, managing, and troubleshooting the storage media connected to your Mac, including internal and external

Note

Most drives come formatted for Windows-based computers. While these hard-drives will work out of the box with your Mac, it is a good idea to change the format of the disk to Mac OS X's native journaled HFS+ file system, because some features, like Time Machine, won't work with NTFS or Fat-32 formatted drives.



3D graph of a Bessel Function

hard drives, disk images, CDs, and DVDs. With Disk Utility, you can verify the integrity of a disk, format it, repair it, securely erase data, create compressed or uncompressed disk images and partition a hard drive. You can also create secure encrypted disk images for storing important files using industry-standard AES 128- or 256-bit encryption.

Grab

Grab is Mac OS X's built-in screen capture application. With Grab you can capture a section of the screen, an application window (sans the drop shadow), a menu or the entire screen. You can even set a timer so you can activate part of the screen before taking a picture. All the images are saved in a high-resolution TIFF format.

Grapher

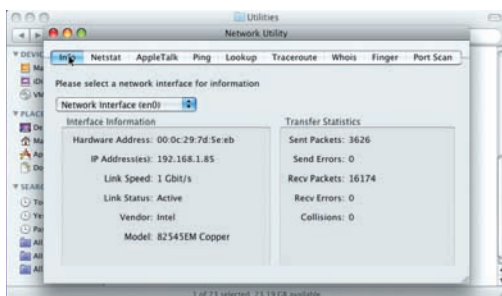
Grapher is a program that lets you graph equations and data sets and visualise the results on your Mac in real time. Grapher displays graphs of equations that are built-in to the program, as well as equations you enter, in 2D and 3D. It can handle a wide range of coordinate systems (Polar, Cylindrical, Cartesian, and Spherical) and works with a wide array of mathematical functions, including differential equations, parametric curves, and more. The tool is very useful for someone studying calculus. You can even export your graphic as an animation once you are done plotting and analysing.

Note

Many third-party programs, like Firefox, do not support Keychain.

Java Preferences

These utilities make it easy for you to customise what you want the Java programming language to do for you and how. Java Preferences allows you to select your preferred Java version, manage security preferences, and configure the various debugging options



Network info

4 Applications and utilities

available. The included Java Web Start automatically downloads and runs Java applications from the internet if you access them.

Keychain Access

Keychain Access securely stores all your passwords for web sites, servers, networks, and applications, for the moments when you inevitably forget them. As long as you remember your system login password, you can recover any password stored in the Keychain. You can view and manage digital certificates, and even securely store notes containing important information readable only in Keychain.

Migration Assistant

Migration Assistant simplifies the process of moving your information, settings and media from one Mac to another by transferring documents, music, photos, applications, network settings, and preferences. Simply connect the two Macs using a FireWire or Ethernet cable and use this utility. If you used the Time Machine application to backup, you can transfer files from your backup copies by connecting your Time Machine backup drive via USB or wirelessly using Time Capsule.

Network Utility

Network Utility offers an interface with information about your network and a wide range of tools for common networking tasks. For users familiar with Unix network diagnostics, there are also buttons for Netstat, Ping, Lookup, Traceroute, Whois, Finger, and Port Scan.

Podcast Capture

This utility is useless to you if you don't have access to a Mac running Mac OS X Server (Leopard or later). But if you do have access, Podcast Capture works in conjunction with Podcast Producer and lets you capture high-quality audio and video from cameras, record screen captures, and upload existing content to Podcast Producer for encoding and distribution with ease.

RAID Utility

If you have a RAID (Redundant Array of Inexpensive Disks) card (only available for Mac Pros and Xserve) installed on your Mac, RAID Utility will allow you to create a RAID array using RAID 0, 1, or 5 and configure the array on your system by allowing you to designate an available drive as a hot

spare, check the status of your RAID card, drive modules, and RAID arrays, display and save a log of operations and lots more.

Remote Install Mac OS X

This utility allows you to install Snow Leopard on a Mac wirelessly without using a DVD drive. Currently, this is useful for only the MacBook Air as it's the only Mac shipping that lacks a DVD drive.

System Profiler

System Profiler provides detailed information about your hardware, software, network, and everything you want to know about your Mac in an easy-to-read layout. It's perfect for checking to see if your Mac meets the requirements for a new hardware or software product you wish to buy and for helping Apple Support troubleshoot your Mac. You can save your system profile or have it sent directly to Apple Support from this utility. To invoke System Profiler, click on the Apple menu and choose About This Mac > More Info.

Terminal

Mac OS X derives itself from an industry-standard Unix foundation. The Terminal application is your window into the incredibly powerful world of Unix. You have access to all the standard commands, tools and scripting languages of Unix in Terminal. It also includes numerous shortcuts that will save you time. For example, you can copy and paste using text commands, and if you drag files or folders into Terminal, the correct file path appears automatically on the command line. You can manage multiple sessions of Terminal from a single window using tabs. When you're confused about any Unix command, type `man command-name` on the Terminal and you will get a manual page where you can learn how to use it.


VoiceOver Utility

VoiceOver is Mac OS X's built-in screen reading software. It describes aloud whatever is happening on your computer screen using one of the voices installed with OS X and enables you to control your computer using only the keyboard.

VoiceOver Utility allows you to customize VoiceOver settings so as to suit your needs. With this utility, you can control and change what voice is used, adjust verbosity, create custom pronunciations, customise how your

computer is navigated when using VoiceOver, how web pages are handled by VoiceOver and how the keys on the keyboard control your Mac. You can even export your VoiceOver setting from this utility and take them with you to another Mac.

X11

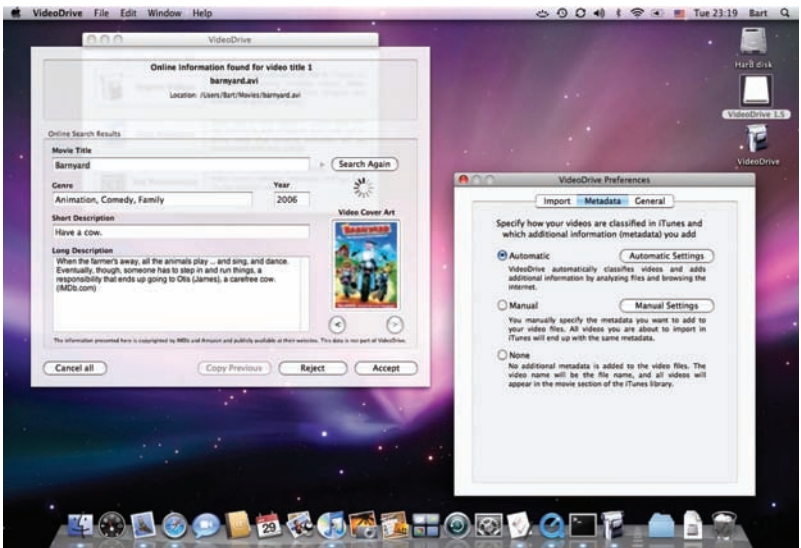
X11 is a Unix tool/environment which is supported by Mac OS X, thanks to its Unix foundation. It provides a complete X Window system graphical user interface with the help of the included X11 display server software, open source client libraries, developer toolkits and other useful utilities. Using X11, your MAC can run many graphical Unix applications. These applications even support minimizing to the Dock and seamless copying and pasting between themselves and other normal OS X applications. 

5 Useful software

There's so much you can do on your Mac, but then you also need the best software for this. What better place than the internet to find the best software? The trick is to find the right application for your needs. Try out the following software to *macnify* your computing experience. You can find it on this month's DVD.

5.1 VideoDrive 1.9

VideoDrive is a small handy utility that lets you rip DVDs. It encodes videos through codecs that come with QuickTime, fetches metadata from Internet Movie Database (imdb.com) and finally passes the formatted files to iTunes.



Rip movies on your Mac with VideoDrive

5.2 Bevy 1.0.4

If Dock and Spotlight let you down, you can use third-party utilities such as Bevy to launch programs. While most software are shortcut-based, Bevy serves as a launcher for the visually inclined users. Press a keyboard shortcut, or click on Bevy's menu-bar icon for a graphical display of all the

5 Useful software

applications on your Mac, with the currently running programs highlighted. From here, you can just click on a program's icon to launch (or switch to) the application.



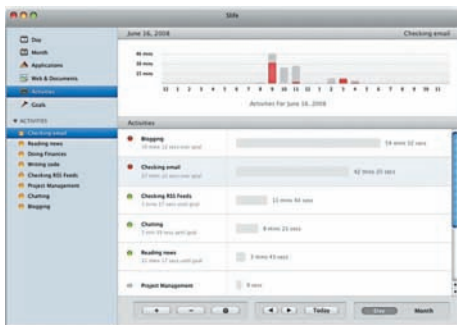
Bevy's a fun approach to working with applications, apart from helping you rediscover stuff you'd forgotten that you installed.

You can hold down a letter on your keyboard to highlight only the programs whose name starts with that letter. Drag a document into Bevy to highlight all the programs that can open the file.

If your Mac is loaded with applications to the extent that the default view is too cluttered to read, exclude the unwanted programs. You can also arrange applications into folders and make Bevy display programs by folders.

5.3 Slife 2.1

Slife takes care of all your time-tracking needs by collecting data on how you spend time using the programs on your Mac, designing a web site, editing a document, or working on a project and putting it into easy-to-read reports, graphs



Keep track of your time with Slife

and calendars. You can create groups of linked applications and documents to collectively track an activity. In terms of the interface, it provides you with daily and monthly views and compares them to the maximum or minimum goal for the activity in that time duration if you have set it.

5.4 Dictionary Cleaner 1.5

Dictionary Cleaner is a simple system preference pane and fills an obvious hole in OS X's feature set. With the built-in spell check in OS X, you can add words so they won't be flagged as incorrect in the future. But once you've added them, there's no way to edit or delete those additions. This third-party application, shows a sorted list of all words you've added and lets you edit or delete any of them. You can also add new words directly from within Dictionary Cleaner.

5.5 Notify 1.0.5

Checking your Gmail account can be a hassle if you don't access it from a dedicated email client. If you need a utility that sits unobtrusively in your menu bar and periodically checks for new messages, Notify is the answer to your problems. It is a handy way to keep an eye on your Gmail account. The program shows a short preview of the 20 newest unread messages in up to four separate Gmail accounts, each account having a tab of its own and informs you of incoming new mail either by the menu bar or Growl notifications. Double-clicking on a message takes you to Gmail and marking it as read removes the message from Notify.

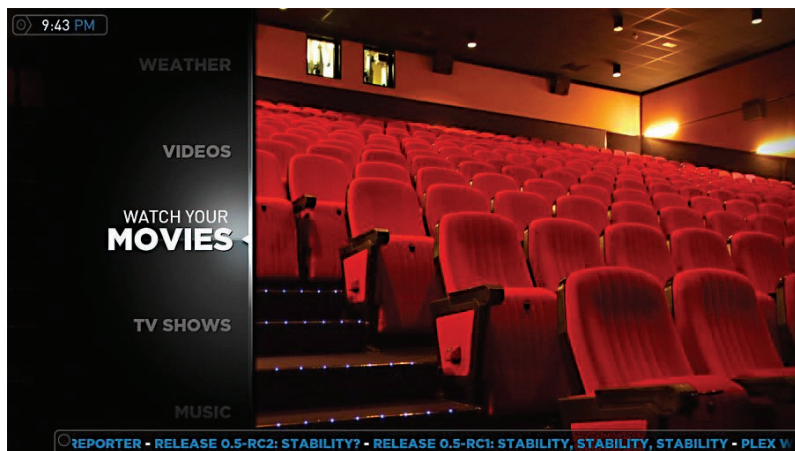


Now you can read your mails in multiple Gmail accounts

5.6 Plex Media Center 0.8.0

This is a video-cataloguing and playback application as an effective alternative to iTunes and Front Row without the need to copy all your media files into its own hierarchy. It lets you control the folder

5 Useful software



Plex is an effective alternative to iTunes

structure of your media and supports almost every major video format available out there. The built-in library also supports third-party plug-ins for complete customisability.




Wake up the DJ in you with Tangerine

5.7 Tangerine 1.3.6

This is a handy utility that lets you create tempo-based iTunes playlists by determining the beats per minute (bpm) and beat intensity of all the songs in your iTunes library. It's very simple to use. Just launch Tangerine and it automatically analyses your iTunes library to show you a list of songs with similar tempo, so you can easily create cohesive playlists and bring out the DJ remixer in you.

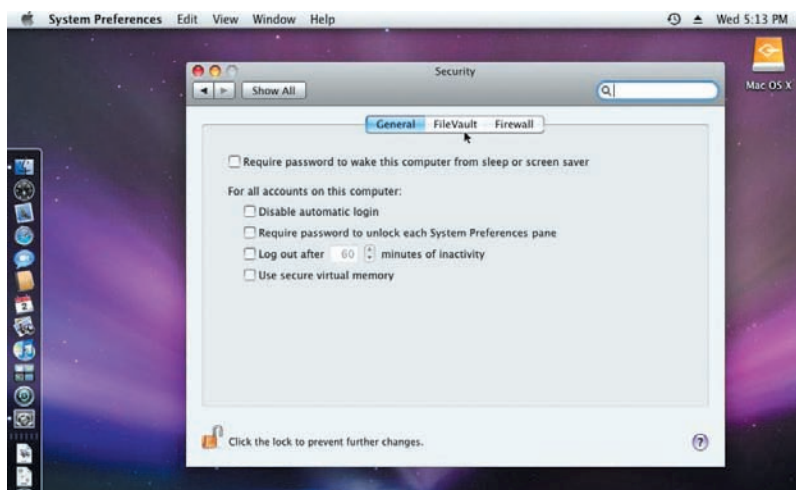
5.8 USB Overdrive 3.0.1

USB Overdrive lets you customise your USB input devices (and, more recently, Bluetooth mice) with lots of useful and generally better options than the software included with those peripherals. It even works with most devices that aren't officially supported by Mac.

You can assign and change functions of your mouse buttons, and customise scrolling speed and acceleration. You can assign functions such as entering key combinations, activating system controls, launching applications, opening files or folders, and executing scripts to buttons and keys of your keyboard/mouse using USB Overdrive. You can even make your peripherals work differently in different applications. USB Overdrive's interface might be a little tricky to figure out, but the software offers Mac users sophisticated button controls that can reduce clicks and enhance productivity. 

7 Security

Till Mac OS 9, the focus was more on ease of use and interface, thus sidelining security features. However, it still remained secure to a large extent due to the relative obscurity of Mac OS as a platform, deeming it unattractive to attackers. Almost all of these fundamental vulnerabilities such as the existence of a full pre-emptive multitasking routine (a feature that blocks and protects the memory allotted to each program separately, so that the system is more stable and malware cannot affect the functionality of other processes) and multiple user support, have been corrected in Mac OS X.

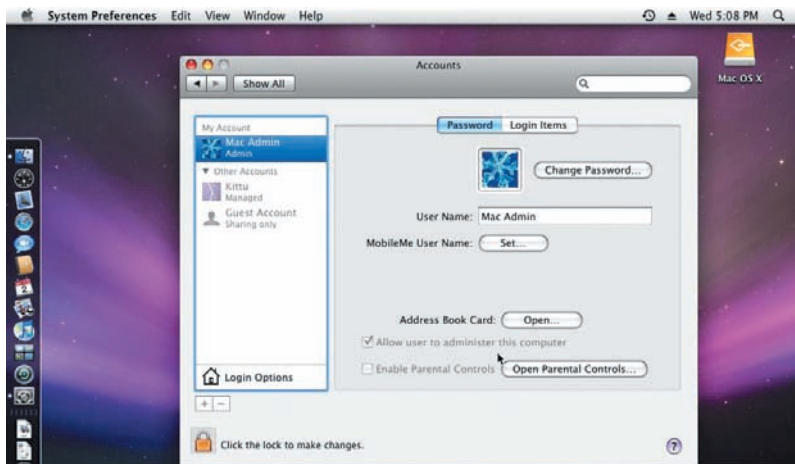


Mac OS X has enhanced features in its security menu

While Mac OS X supports all default security features such as multiple user support and built-in firewalls, versions from Mac OS X 10.3 (Panther) onwards support advanced features such as parental control, file encryption and most recently, built-in malware detector.

7.1 Multi-user support

This feature is available on all versions of Mac OS X. When you first switched your Mac, you were asked to give your user information. If you wish to add multiple users, do the following:



Mac OS X supports multiple users

Click on the system preferences icon in the dock. In the pop-up menu that appears, click on Accounts. If some of the options are hidden in this menu, you need to click on the lock at the bottom left corner and enter your administrator password. Once you have done so, you can add accounts, delete accounts or modify privileges for accounts.

7.1.1 Add Account

Click on the + button below the list of accounts in order to add an account. In the New Account pop-up menu that appears, select an account type.

Administrator

Very similar to the administrator account type in Windows, this account allows you to change system settings, install software for yourself and others. This account type also allows lets you create, modify and delete other accounts.

Standard

A user of this account type can install software for himself and change settings related to his own account.

Managed with parent controls

This account type allows you to restrict the usage of the computer by the user of this account type in terms of hours used each day, content regulations, access to email, internet and chat.

7 Security

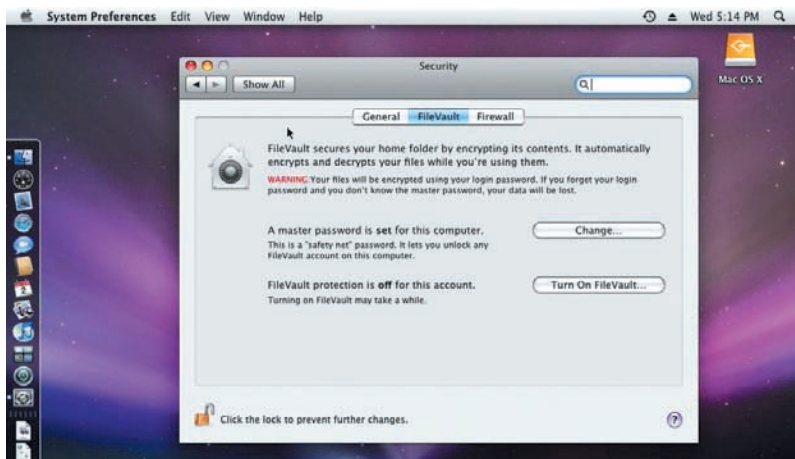
Sharing only

An account type meant for remote users only. This type of an account cannot login to the computer normally at the standard desktop.

Group

A group account consists of several accounts and lets you regulate privileges for a set of accounts.

After choosing the account type, you will be required to submit an account name and password. If this is a high security account, you have the option of ticking the “Turn on File Vault Protection” checkbox.



Secure your privacy with File Vault

7.2 The File Vault Menu

File Vault

An option found on versions starting Mac OS X 10.3 (Panther), file vault is a file protection system that encrypts your files before saving to hard disk, thus making them inaccessible to others. Similar to features found in Windows' NTFS file system, file vault encrypts your entire home directory. File vault turns the directory into an encrypted file system, which is decrypted and mounted when you log in. Turn this facility on when you intend to use an account for storing important/personal data. If you enable File Vault protection, you will have a further option to turn on secure virtual memory. This is a further security measure, which encrypts your virtual memory also.

While File Vault can be separately turned on for each account, you'll need a master password for this. Remember if you turn File Vault on for your account and you forget your password as well as the master password, you'll lose your data. You can always set / change the master password by going to Dock > System Preferences > Personal > Security > FileVault.

You may choose to give limited administrator privileges such as installing software for everyone, to any other type of user account by checking "Allow this user to administer this computer".

Once you are done creating a new account, you can access it from the log in screen. You may wish to fine tune your login options by clicking on the "Login Options" button under the accounts list in the Dock > System Preferences > System > Accounts menu. Some of the options available here are:

Automatic Log in

You can configure your computer to automatically log in to an account during start up. Do not enable this for enhanced security.

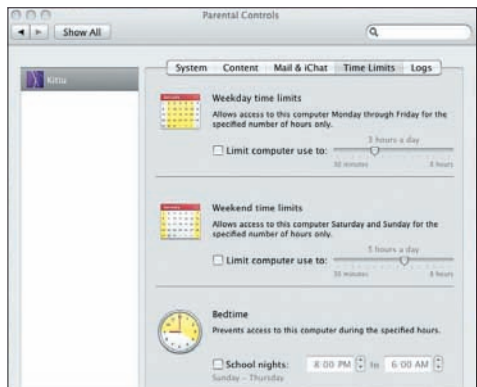
Enable fast user switching

Similar to the feature in windows, this allows you to log into multiple accounts simultaneously, so that they may be switched faster, at the cost of system resources.

You can also use this menu to customise the login menu for other features such as, whether the usernames are available as a list or have to be entered manually, or whether the power off option is available at log in.

Parental Controls

Parental Controls allow Mac administrators to regulate computer usage by other users. Not only can the administrator regulate



Keep tab with Parental Controls

content to prevent malicious material, the administrator can also regulate the amount of time the computer is used for by the user, the specific usage of services such as internet, email and chat.

7 Security

To use parental controls, go to Dock > System Preferences > System> Parental Controls. Choose the user you wish to impose parental controls on the menu in the left. The menu to the right now has the wide array of restrictions you can impose on the user. Some of its features include the ability to give the user a simpler version of the Finder; this is a feature meant for children. You can find this on the system sub-menu towards the right.

To impose restrictions on the web sites accessed by the user with the option to avoid adult sites by referencing a repository maintained by Apple, or to avoid all except an allowed list to be created by the administrator.

Using this menu, the administrator can also configure the parental controlled user account to enable only certain email and instant messaging clients, and also allow email and instead messaging only with a select set of addresses. The administrator can also set up the system in such a way that every time the user attempts to contact anyone outside this closed group, an email warning is sent to the administrator.

The administrator can place limits on the number of hours in a day, for both weekdays and weekends, that the user uses the computer. Configurations can also be made in such a way as to prevent usage during specific hours, once again separately for weekdays and weekends.

Lastly the administrator can log the users web activity, applications and iChat usage for period of time in order to enable monitoring

For all these features and more, go through the tabs found on top of the Parental Controls Popup menu.

Network Security in Mac OS

Though its Unix like architecture makes Mac OS less vulnerable than Windows to hacker attacks and other network threats, it nevertheless comes with a built in firewall, much like Windows. This firewall, known as IP is a FreeBSD project component and is thus open source.


To access the options and settings associated with the firewall, go to Dock > System Preferences > Personal > Security. Among the three tabs in the menu that appears, go to the firewall tab. Here, you can choose to have multiple levels of security, ranging from allowing all incoming connections to allowing only a user created list of applications to connect through the network.

The 'Advanced' button found at the bottom right corner gives you access to some features such as stealth mode, a mode that prevents your computer

from responding in any manner to network activity, effectively hiding its existence. You will also find options to log your firewall activity here.

For those of you with more specific and advanced security needs, there are a number of third party firewall applications you can choose from. One of the most popular among them is Little Snitch (visit <http://www.obdev.at/products/littlesnitch/>).

Viruses and malware

Though versions of Mac OS X server ship by default with the built-in anti-virus Clam AV, the versions meant for home and office use do not. You can download and install Clam AV (available at <http://www.clamav.net/> for free). Clam AV (short for Clam anti-virus) is a free, open source anti-virus software meant for Unix-like operating systems. The version for Mac OS X, with a graphical user interface, is known as ClamXAV and protects against most viruses and malware. Constant updates to ClamXAV, such as virus definitions and program updates are all made available for free. 

8 Time Machine & Boot Camp

This chapter deals with two important features of Mac OS – Time Machine, and Boot Camp. While Time Machine ensures the data safety of your computer by acting as a backup utility (a more advanced and powerful version of system restore in Windows), Boot Camp allows you to use multiple operating systems (mainly Windows), on your Mac.

8.1 Time Machine

Apple has gone out of its way to make this utility live up to its name. Introduced along with the 10.5 “Leopard” release of Mac OS X, everything from the name, interface to the working methodology of this handy little application is Time Machine themed. While the programme, like many other backup utilities stores incremental backups of all files on the computer (or a part, which you can choose), the interface, using Apple’s Core Animation API, looks like a time tunnel, with stars and galaxies in the background, to give you a true feel of time travel. Let us take a look at how it works.

By default, the Time Machine can be accessed from the dock. However, if you have disabled this, you may access it from system preferences or using finder. Once the Time Machine menu opens, the first step to follow is to turn it on. To do so, click on the Time Machine Slider on the bottom left corner of the menu, so that it slides to the on position. You will be asked to set up time machine.

Once you click on the “Set up Time Machine” button, you will face a window wherein you may click to choose your backup location. In the list that follows this click, you may choose one of your hard disk partitions, an external drive that has been plugged in (which will automatically be added to this menu) or, the coolest of all, choose to set up a Time Capsule.

8.1.1 Time Capsule

The Time Capsule is a network storage device cum gateway router marketed by Apple starting 2008. Optimised for working with Time Machine, the Time Capsule is today available in two sizes, 1 TB and 2 TB. The device works on the Apple AirPort technology (the Mac version of Wi-Fi) and supports 802.11n connectivity with downward compatibility. The device is multi band (allowing multiple computers to access it at once), can be personalized, and expanded in memory using an external hard disk connected through its USB port. Apart from being a Backup tool, the Time Capsule is also an AirPort

base station, allowing you to set up a home Wi-Fi network. In the choose back up location menu, if you choose to set up a Time Capsule, the computer searches for a wireless Time Capsule within range, connects to it, and asks you to set it up. You will be asked to enter a username and password for your backup, as the Time Capsule being a network device is expected to serve as a backup location to multiple computers.

Once you have set up your backup location, (a local drive, an external drive or a Time Capsule), you have to click the options button in order to set up its specifics. Here you may choose which parts of your system you do not want to back up (by default, all except your backup drive is backed up). Once you click on the + button, you may browse for a folder, select it and click exclude.

Time Machine by default maintains hourly backups of all your selected (not excluded) folders for the last 24 hours, daily backups for the last week, and weekly backups till your backup drive / Time Capsule is full. You also get to choose in the options menu whether Time Machine should alert you when deleting an old backup due to lack of disk space.

Now on the default Time Machine Menu, you should be able to see current back up drive, the free space available on this drive, the date and time of the newest and oldest backups and the time left till next backup. When this countdown reaches zero, it will take one or two minutes preparing your backup, and a long time (up to a few hours, depending upon the amount of data) backing up your data. However, this happens only with the first backup and subsequent backups are much faster.

To restore data, click on the Time Machine icon from the dock again. This time, you will directly gain access to the time machine interface. Marvel at the beauty of it. The long time tunnel like appearance arranges snapshot views of each of your backups in chronological order, with the newest in the front.

For restoring simple files such as your documents and images, you may use this menu itself. Click on the snapshot that has all the files you need in it, choose restore and in the subsequent menu select what portions of that backup (folders, documents etc) you need to back up.

However, a Time Machine Backup can also be used to restore your computer from scratch, if your operating system files have been corrupted and your computer rendered unusable. To do so:

1. Insert your Mac OS X install disk that came with your computer into your DVD drive and start your computer. If your back up is on an external hard disk, connect it to the computer and turn it on.

8 Time Machine & Boot Camp

2. Hold down the [C] button while booting so that it boots from the DVD.
3. Go through the normal things such as selecting your language and keyboard layout.
4. Go to **Utilities > Restore System from backup** from the menu found on top.
5. In the window that pops up asking you to choose a backup source, click select **Time Machine**.
6. If your Backup location was a Time Capsule, ensure that it is turned on.
7. Time Machine will soon take you through the process required to gain access to your Backups (a username and password) and bring you to the list of snapshots of your backups. Choose the one you wish to restore / revert to.
8. Clicks **continue**, following which you will be asked to choose the disk you wish to restore. There will mostly be only one option and this will be your Mac hard disk. However, you will be given multiple options if you had multiple partitions / dual boot.
9. Once you have chosen the disk to restore, the lengthy process of restoration begins. While the time required for this is largely dependent on the amount of data, the actual time required is almost always much less than the initial prediction during the process. So hope for the best.
10. Once the restoration process is done, you may restart your computer and remove the DVD from the drive, to a Mac that is as it was at the time of back up.

8.2 Boot Camp

A Mac is built for compatibility, supporting all industry standards, Mac OS X is almost fully compatible to windows. For those for whom even this isn't enough, there is Boot Camp.

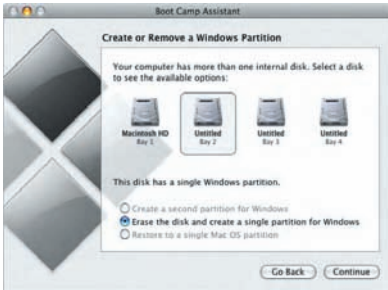
Boot Camp is a utility included in Mac OS X 10.5 Leopard onwards that allows you to dual boot Microsoft Windows with Mac OS X. It guides you through easy repartitioning for windows, assists you by installing a boot loader so that you can choose the OS to boot into at the time of start up, and adds a Boot Camp control to the Microsoft windows control panel so that these settings can be modified from there also.

Boot Camp as of now officially supports only Microsoft Windows XP SP2 and Microsoft Windows Vista. A version supporting Microsoft Windows 7 is about to be released in the next few days.

Here is how to go about dual booting Windows on your Mac. Go to **Application/Utilities** from your task bar and run the **Boot Camp Assistant**

over there. It is a simple wizard like interface that takes you through the following processes.

1. **Creating a partition on your hard disk for Windows:** Allowing for non destructive repartitioning of your hard disk (without losing any data), this menu comes with three options, you can choose to use a 32GB partition for



Creating Partitions when there are multiple internal drives

Windows, split the hard disk 50-50 between Windows and Mac OS, or manually choose a size. When manually choosing a size, remember to make the Windows partition at least 5 GB in size, while the partition with Mac OS currently installed in it should at least have 5 GB left free. If you have multiple internal hard disks, it is advisable to keep your Windows partition on a different disk.

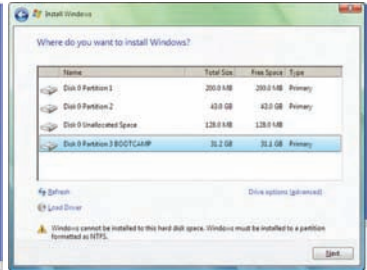
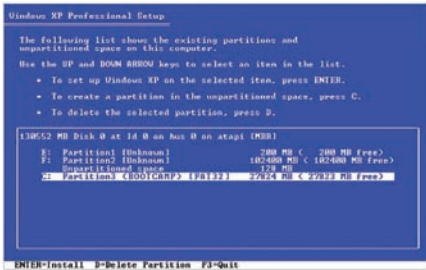
2. **Start Installing Windows:** Once partitioning is done, you will be back to the main Boot Camp menu, from where you have to select “Start the Windows Installer”. Follow the menu until you are asked to insert your Windows disk. Note that if you are attempting to install Windows XP, it has to be SP2. You cannot install a basic Windows XP and attempt to upgrade to SP2 later. Soon your computer will restart and boot from the Windows DVD.



Start Install

3. **Choosing your partition:** Follow the simple on screen instructions until you arrive at the choose partition menu.

You need to be careful doing this step. Select only the partition labelled C: Partition* <BOOTCAMP> (where * is a number such as 1,2,3). Only one partition will have a name in that format. Choosing any other partition might wipe out your Mac OSX along with all your data from your computer. If you are installing Windows Vista, the partition will appear as Disk * Partition * BOOTCAMP.



The Format Partitions menus in the Windows XP and Vista installation

4. Formatting your Partition: Now you will be asked if you want this drive to be FAT or NTFS, i.e. to choose its file system. Windows Vista requires NTFS, so it will by default format your partition as NTFS without asking you. Also if the partition is 32 GB or more in size, it has to be NTFS. However, if the disk is made NTFS, it will be read only (you cannot modify files or write new ones) while running Mac OS X. So make your choice wisely.

5. Installing Drivers: Your Mac OS X CD that came with your Mac also contains windows drivers and Boot Camp components to ensure flawless functioning of windows on your system. To install these drivers, once you are logged into Windows, (after the whole installation process is over), insert the Mac OS X DVD. If autorun is disabled, you will have to open the drive in my computer and run setup.exe manually.



The Startup menu

Otherwise, it will start automatically. The setup will install drivers for all your built in Mac components. However, some external add on peripherals such as external iSight webcams might not be supported this way. You are advised to go to the Apple web site for these drivers.

Note

Even if a warning appears during installation, claiming the drivers are unverified, continue with the installation

Your computer might restart and go through multiple found new hardware wizards (Windows XP only). Proceed without clicking cancel anywhere.

6. Setting up your default start up: Thanks to the Boot Camp control panel



The Boot Camp control panel in the Windows Control Panel. Notice the Target Disk Mode

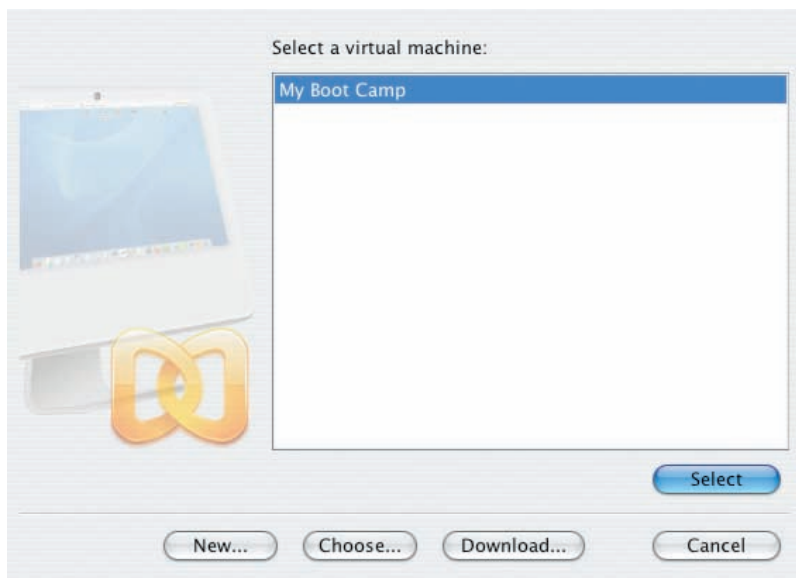
installed in your Windows control panel, this can be done from both Windows and Mac OS X. In Mac, go to System Preferences > start up disk (found either on the dock or using finder). In the menu that shows up, you can choose your default operating system. In Windows, this can be done using Control Panel > Boot Camp Control Panel. This menu also offers you the unique feature of using your computer as a target disk. To do this, select the disk of choice, Windows or Mac OS X and click target disk mode. Once your computer restarts, you may use its fire wire port to connect it to any other computer and use it as an external hard disk. This may be done in extreme cases for data recovery or restoration.

You can also quickly boot into Mac OS X



Setting up your default OS

8 Time Machine & Boot Camp



Using your Boot Camp Windows installation as a virtual machine

while using windows by right clicking the Boot Camp system tray icon and choosing restart in Mac OS X.

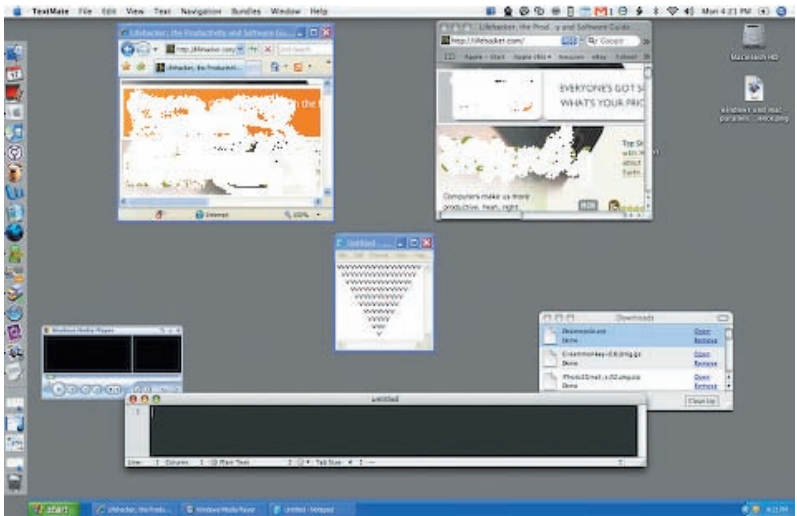
The true productivity of using Windows on a Mac is not explored until you utilise Boot Camp in tandem with and supported by Parallels Desktop for Mac.

Released in 2006 (first version), Parallels Desktop for Mac, by Parallels Inc. is the first software to bring Virtualization support to Macs based on Intel processors. While its early versions were similar to virtualization tools found in windows, the later versions have been juiced up with various cool features. Some of these include support for DirectX and all its components, seamless virtualization, etc.


Dual Booting Windows is fine for its various features, but there is the hassle of having to restart your computer, which should ideally be avoided. The alternative is virtualizing Windows using a tool such as parallels. However, this brings with it a significant lowering in performance.

The alternative then, is to dual boot and virtualize the same Installation, through the Boot Camp support, found in Parallels Desktop version five and later. To do so, go through all the steps required to dual boot Windows

on your system as explained in the previous section. Now install Parallels on your Mac and start it. Your Boot Camp installation of Windows will be listed here as a virtual machine. Select this to start. The first start up will take quite a long time. However, soon you will have access to a plethora of your Windows features while still logged into your Mac OS X. Notice the Windows and Mac task bars together? Pretty cool, eh? This is a feature of the Parallels Desktop known as coherence. It allows for seamless virtualization of windows on your Mac OS X, allowing your Mac OS X and Windows task bars to coexist.



One of the coolest features of Parallels Desktop

An alternative to Parallel's Desktop 5 is Vmware Fusion. It also has many of the popular features such as support for Boot Camp. However, many of the seamless virtualization features such as coherence are missing. 

9 Using commands

9.1 Navigating in Unix

If you cannot see any icons for your files and folders, how are you supposed to work with them? You can ask Unix to tell you what folder you're in presently (using the `pwd` command), what's inside it (using the `ls` command), and what folder you want to switch to (using the `cd` command).

Note

UNIX is case sensitive. Command names are almost always in lowercase (like `ls` and `pwd`).

9.1.1 `pwd` (print working directory)

This is one of the most basic navigation commands. The `pwd` command doesn't actually print anything on your printer as the name suggests; instead, the `pwd` command types out, on the screen, the path Unix thinks you're in (the working directory).

9.1.2 `ls` (list)

The `ls` command makes terminal list out the names of all the files and folders in the folder you're in, i.e., your working directory.

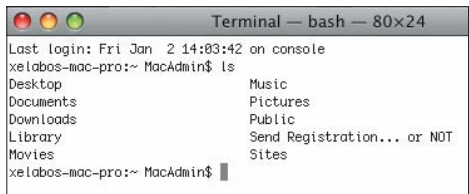
Terminal can also list what's in any other directory (one that's not the working directory) just by adding its pathname as an argument.

To see a list of the files in your Documents directory, then, you could just type `ls /Users/Anot/Documents`. Better yet, you could save typing with `ls ~/Documents` because the `~` symbol is short for my home directory. Some useful flags for the `ls` command are:

-a. The `ls` command will even display the names of files and folders that are invisible by the finder's definition. That doesn't mean you will find everything. Files that are invisible by the Unix definition of invisibility still don't show up. `-R` produces a recursive listing. You will even get the list of sub directories in the list.

9.1.3 `cd` (change directory)

To change your working directory, you use the `cd` command, followed by the path of the directory you



```
Terminal — bash — 80x24
Last login: Fri Jan 2 14:03:42 on console
xelabos-mac-pro:~ MacAdmin$ ls
Desktop          Music
Documents        Pictures
Downloads        Public
Library          Send Registration... or NOT
Movies           Sites
xelabos-mac-pro:~ MacAdmin$
```

List of files in your working directory

want to switch to. For example, if you want to see what's in the Movies directory of your home directory, type `cd /Users/<User name>/Movies` and press [Enter]. The % prompt will show you what it considers to be the working directory. Now you can use the `ls` command to list the contents of your Movies directory.

You don't even need to type the entire path. You can just specify which directory you want to see relative to the directory you're already in. For example, if your Home folder is the working directory, the relative pathname of the Trailers directory would be `Movies/Trailers` and you need not use the absolute pathname.

Here are the different ways you could switch from `~/` (your home directory) to `~/Movies`:

- `cd /Users/chris/Movies`. It will work no matter what your working directory is.
- `cd ~/Movies`. This, too, is an absolute pathname like the previous option and you could type it from anywhere. It uses the `~` shorthand (which always means my home directory).
- `cd Movies`. This streamlined relative path if you're already in your home directory.

Note

There's another way to specify a directory that involves no typing at all: dragging the icon of the directory you want to specify from the Finder directly into the Terminal window.

9.1.4 . .

Type `cd . .` to go from your home directory to `/Users`. You can use the dot-dot shortcut repeatedly to climb multiple directories at once: `cd . . / . .`, which means "switch the working directory to the directory two levels higher up." If you were in your Documents directory, `. . / . .` will change the working directory to the Users directory.

9.1.5 Keystroke-Saving Features

By now, you might be thinking that clicking on icons in Finder would still be faster than doing all this typing. Here's when the typing shortcuts of the `tcsh` shell come in and make your life easier.

9.1.6 Tab completion

Just like you highlight a file in a Finder window by typing the first few characters of its name, the tab completion feature saves you a lot of time by instantly fleshing out the rest of the directory's name after you have typed the first couple of letters of the path you want. Type `cd /U` and then press

[Tab] and the Terminal will finish the directory name Users for you. Here are some tips for tab completion:

- Tab Completion is case-sensitive.
- Terminal adds backslashes automatically, if your directory names include spaces, \$ signs, or other special characters. But you still have to insert your own backslashes when you type the initial characters that tip off tab completion.
- If it can't find a match for what you typed, Terminal will produce an error tone indicating the path does not exist. If it finds more than one file or directory that match what you typed, Terminal beeps and shows you a list of them. To specify the one which you really wanted, type the next letter and then press [Tab] again.

9.1.7 Using the history

Retyping any command, is never necessary. Terminal (or, rather, the `tcsh` shell it's running) remembers the last 150 commands that you entered. At any prompt, instead of typing, just press the up or down arrow keys to scroll through the various commands in the shell's memory.

Note

To see a list of what's in a directory and in all the directories inside it, just type `ls *`.

9.1.8 Wildcards

Wildcards are special characters that represent other characters in Unix. For example, to see a list of the files in the working directory that end with the letters at, you could type `ls *at`. Terminal would show you files named borat, wildcat, lolcat, and so on; and hide all other files in the list. Likewise, to see which files and directories begin with Im, you could type `ls Im*` and press [Enter]. You'd be shown only the names of icons in the working directory called Image01, Image02, Impotent, and so on.

9.1.9 The ~ shortcut

The ~ is a shortcut to your home directory. You can also use it as a shortcut to somebody else's home directory simply by tacking on that person's Mac OS X account name. For example, to change to Ram's home directory, use `cd ~Ram`.

9.2 Working with Files and Directories

This section shows you how to copy, move, create, and delete directories and files you have navigated to and listed.

9.2.1 cp (copy)

You can use the Unix command `cp` to copy and rename a file in one move. The basic command is: `cp path1 path2`, where the path placeholders represent the names of the original file and the copy, respectively.

9.2.2 Copying in place

To duplicate a file called `FT.doc`, you would type `cp FT.doc FT2.doc`. You need to add a backslash before a space if you want to name the copy file with two words (`FT\ Backup`, for example).

9.2.3 Copying and renaming

To copy the same file into, say, your `Movies` folder at the same time, just change the last part of the command so that it specifies the path, like this: `cp FT.avi ~/Movies/FT2.avi`.

Note

`cp` will replace identically named files without a warning. You need to use the `-i` flag, i.e., `cp -i`, if you want to be warned before `cp` replaces a file in this way.

9.2.3 Copying without renaming

To copy something into another directory without changing its name, just use a pathname in the final part. So, to copy `FT.doc` into your `Movies` folder, for example, you just need to type `cp FT.doc ~/Documents`.

9.2.4 Multiple files

You can even copy several files or directories at once. Where you normally specify the source filename, just list their pathnames separated by spaces. You can also use the wildcards like `*` to copy several files at once.

9.3 Moving and renaming files and directories

9.3.1 mv

To move or rename your files, you use the Unix command `mv`, almost exactly the same way you use `cp` (except that it automatically moves directories inside of directories you're moving, so you don't have to type `-R` flag).

The syntax is: `mv oldfilename newfilename`. For example, to change your `Documents` directory's name to `Docs`, you'd type `mv Documents Docs`. You can rename both files and directories like this.

To rename a file and move it to another directory simultaneously, just replace the last portion of the command with a pathname. All the usual shortcuts apply, including the wildcard.

9 Using Commands

You can follow the `mv` command with either of these two options:

- `i`. makes the Terminal ask your permission before replacing a file with one of the same name.
- `-f`. Overwrites like-named files without asking you permission. Actually, this is the default way in which `mv` works if you don't specify otherwise.

9.3.2 `mkdir`: Create New Directories

In Terminal, you create a new folder using the `mkdir` command (for make directory). Follow the command with the name you wish to give the new directory, like this: `mkdir 'Digit Fast Track'` (the single quotes let you avoid having to precede each space with a backslash). By default, the `mkdir` command will create the new directory in the current working directory, although you can just as easily create it anywhere else. You just need to add the pathname to your argument.

Note

The `mv` command will never replace one directory with an identically named one (or an identically named file). If there is such an item, only those named differently from any subdirectories in the target directory will be moved.

9.3.3 `touch`: Creating Empty Files

To create a new, empty file, you can type `touch filename`. For example, to create the file `digit.txt` in your working directory, type `touch digit.txt` in Terminal.

9.3.4 `rm`: Removing Files and Directories

Unix provides an extremely efficient and easy way to trash files and directories. With a single command, `rm`, you can delete any file or directory that you're allowed to access with your account type.

To use this command, just type `rm`, a space, and the exact filename of the file you want to delete from the working directory. To remove the file `digit.txt` you created with the `touch` command, for example, you'd just type `rm digit.txt`. To remove a directory and everything inside it, add the `-r` flag, like this: `rm -r trailers`.

You can even use wildcards such as `*` with the `rm` command. If you want to delete everything in the working directory, use `rm -r *`

Just after the letters `rm`, you can insert flags such as:

- `-d` deletes any empty directories it finds, in addition to files. (Otherwise, empty directories trigger an error message.)
- `-i` makes the Mac ask you for confirmation before deleting each file or directory.

- `-P` performs a secure delete. The file's location on the hard drive is written over and erased three times so that nothing, not even Data Recovery software will know what was there.

9.3.5 echo

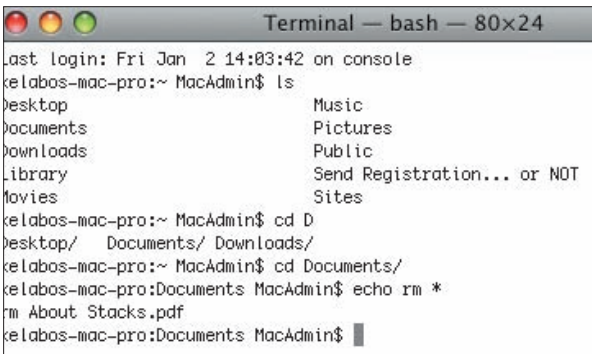
If you are not sure about the contents of the directory you are going to delete, you can make the `rm` less risky by prefacing it with the `echo` command. It makes terminal show the command a second time with a list of exactly what you're about to delete. If you've used wildcards, you'll see the names of the files that will be selected by the `*` character. Once you've reviewed the list and approved what Terminal is about to do, you can retype the command without the `echo` portion to carry out the function.

Note

`rm` doesn't work on file or directory names that begin with a hyphen (-). To delete these items, you have to preface their names with a dot slash (`./`), like this: `rm ./-test.doc`.

9.4 Other useful Unix utilities

So far, you've read about only a handful of the hundreds of Unix programs built into Mac OS X and ready to run. Yes, `ls` and `sudo` are very useful commands, but they're just the beginning. Here's a rundown of some more useful programs that await your experimentation.



```

Terminal — bash — 80x24
last login: Fri Jan  2 14:03:42 on console
kelabos-mac-pro:~ MacAdmin$ ls
desktop                Music
documents              Pictures
downloads              Public
Library                Send Registration... or NOT
movies                 Sites
kelabos-mac-pro:~ MacAdmin$ cd D
desktop/ Documents/ Downloads/
kelabos-mac-pro:~ MacAdmin$ cd Documents/
kelabos-mac-pro:Documents MacAdmin$ echo rm *
rm About Stacks.pdf
kelabos-mac-pro:Documents MacAdmin$

```

Check with `echo` before using `rm`

such as $2+4$, or $92+96$, or $(2*2)+165-95*(2.5/1.2)$, and then press [Enter]. `Bc` will instantly display the result of your calculation. For more `bc` tips and tricks, you can type `man bc` at the prompt.

9.4.1 bc

Unix comes with its own calculator application. When you type `bc` and press [Enter], you get a copyright notice. Once you accept it, you can just type the equation you want to solve,

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9.4.2 open

In Mac OS X's version of Unix, the open command is easy enough: `open -a`, like `open -a Chess`. The `-a` flag allows you to specify an application by name, regardless of where it is present on your hard drive if that application is properly installed. You can even specify which file you want to open in some programs by adding a space and then the file's name, like: `open -a Preview Image1.jpg`.

Note

The `-e` flag opens any text file in TextEdit, like: `open -e Diary.txt`. This shortcut saves you from having to specify the TextEdit application itself like in the previous case.

9.4.3 kill

Mac OS X offers no shortage of ways to kill a program that seems to be locked up. You can force quit it, use Process Viewer and end the process, or use kill from the terminal.

The kill program in Terminal simply force quits a program/process, as though by a remote control. It even works when you telnet or SSH into your Mac over the internet from a remote location. All you have to do is type the kill command followed by the ID number of the program you want to terminate.

9.4.4 top

Typing `top` and pressing Enter gives you a handy table that lists every program that's currently running on your Mac, including the obscure background processes you may not even know exist. The top display will remain on-screen, automatically updating itself as you work, until you type `q` to quit the program. You also get statistics that tell you how much memory and processing power they're hogging. In this regard, `top` is very similar to Process Viewer found in Utilities

Note

If you type `top -u`, you get a list sorted by CPU usage. If your Mac ever seems to act sluggish, you can check `top -u` to see what's tying things up and kill them.

9.4.5 ps

The `ps` (process status) command is another way to see all the programs running on your Mac, even the usually invisible ones, complete with their process ID numbers.

9.4.6 grep

`grep` filter is a powerful program designed to search data fed to it on a quest

for text that matches a specified pattern. It can even pass on the processed result to another program, file, or the command line itself.

9.4.7 shutdown

Using shutdown command from the Terminal has several advantages. You can control when the shutdown occurs, using these flags:

- Now. You can safely shut down right now by typing `shutdown now`.
- `-h`. Typing `sudo shutdown -h 2235`, will shut down your machine at 10:35 p.m. today
- To make the machine shut down at 4:30 p.m. on January 5, 2009, you should type `sudo shutdown 0901051630`. That number code is in Year[last two digits]MonthDateHourMinute format.
- `-r` flag lets you restart instead of just shutting down as in `sudo shutdown -r now`.

You can even turn off your Macs by remote control, either from across the network or across the world via Internet using telnet or SSH to issue the command.

Note

Unless you also use `sudo`, you can only kill programs that you have ownership privileges over. Also if you are having trouble killing an application, you can use the `-9` flag which is the non-catchable, non-ignorable kill.


9.5 Enabling the Root Account

Only one person is allowed to browse any Mac OS X directory, unfettered and unrestricted: whoever holds the root (superuser) account.

To enable the root account in Terminal, all you have to do is make up a password for the dormant root account using the `passwd` command.

```
sudo passwd root
```

The `passwd` utility will then prompt you to enter a new password for the root account.

Once the root account has a password, you can use it to log in with the user name `root`. When you do, you'll realise that the root account's Home folder isn't in the Users folder like everyone else's; instead, it's in the private `var` folder. You will also have complete freedom to modify, move, or change the access privileges for any file and folder on your system. 

10 iPhone and iPad OS

No detailed mention of Mac OS X can be complete without referring to its most famous derivative the iPhone OS which is found on the iPhone, iTouch and now the iPad. iPhone OS is based upon the “Darwin” foundation much like the Mac OS X with a heavily modified user interface to support multi-touch gestures. The current version of iPhone OS for iPhone and iTouch is 3.1 [recently updated to 3.1.3] and for the just announced iPad, there is version 3.2 available of iPhone OS. The iPhone OS 3.2 is incompatible with iPhone or iTouch devices and can be run only on the iPad.

10.1 iPhone OS 3.1

This modification of the famous OS is backward compatible in terms of app support, which effectively means you can straight run apps written



Touch has emerged as the fastest growing interface

for the iPhone/iTouch without any modifications. Further the apps can be run either in the original resolution or they can be maximized to utilize the mammoth screen estate available.

This revision of the OS is pretty similar in functionality (or lack of it) as compared to the iPhone/iTouch version with one major exception. The iPad comes bundled with a brand new app from Apple itself called the “iBook”. The iBook is an ebook reader and an ebook store rolled into one with a magnificent UI, a near universal feature of all Apple products. To emphasise on the glorious UI, the books that you purchase via the online

store are displayed in a virtual wooden book shelf with their front covers and single tap is sufficient to open and display them with flip page animations. A pleasant surprise is found in the fact that the open-source ePub format is

used for the ebooks that effectively means that your books are not locked to Apple's proprietary readers.

Distinguishing itself further from the iPhone/iTouch OS, this version has support for file sharing, when mounted on your Mac or PC a shared file directory appears. It is probably intended as a storage destination for iWork documents and other media files since the apps can't directly access the contents inside this directory.

10.2 iPhone OS 3.2 (iPad OS)

The iPhone OS 3.2 (iPad OS) surprisingly lacks support for Flash, which is a pity given the brilliant screen it boasts of which makes it an amazing platform to surf the web. However, there is a YouTube app available to take care of streaming videos.

There is also support for external display and you can exhibit specific content using certain apps on the external display only, although



Steve Jobs described the iPad as an incredible experience

unfortunately there is no HDMI support and hence pairing it up with HD displays won't be possible.

Things get really interesting when you look at the slightly modified software development tool kit (SDK) which gives a few pointers as to what the future revisions of this OS and device might be capable of. One feature that generated a lot of noise was the presence of hooks in the SDK to accept and decline video conference, flip a video feed and view video calls in full screen or partial screen. The first of these indicate the presence of a camera in future revisions while the ability to flip it is a strong indicator of a front facing one. The device already has support for Wi-Fi and 3G and hence effectively putting a very strong portable video-conferencing solution in your hand if the camera feature is implemented.

We might be making a mountain of the mole, but the ability to view the video in partial screen is a definite pointer towards having multi-tasking ability which the current version of the OS surprising lacks. Apple fan boys might finally have an answer to the "lack of multi-tasking" allegations, though we won't suggest holding your breath for it.

The SDK also has primitive support for SMS and given the fact that the iPad use microSIM for its 3G capabilities, it can be an indication of its ability to be used as a phone. Typing messages via the huge on-screen keyboard would definitely be a heaven for SMS Junkies.

Overall, this version definitely has its limitation given that it was intended to be a netbook replacement instead of small handheld device. But as the SDK points, future revisions look very promising. Apple is known to bring major overhauls with upgrades and addition of video conferencing and phone capabilities to this OS would make the iPad a must have in your backpack device. 